

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Draft National Pollutant Discharge Elimination System (NPDES) General Permit
for the Eastern Portion of Outer Continental Shelf (OCS) of the Gulf of Mexico
(GMG28A000)

AGENCY: Environmental Protection Agency (EPA), Region 4

ACTION: Notice of Draft NPDES General Permit Reissuance, Notice to States of Mississippi, Alabama and Florida for Consistency Review with approved Coastal Management Programs.

SUMMARY: The Regional Administrator of EPA Region 4 (the "Region") is today proposing to reissue the National Pollutant Discharge Elimination System (NPDES) general permit for the Outer Continental Shelf (OCS) of the Gulf of Mexico (General Permit No. GMG28A000) for discharges in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 Code of Federal Regulations (C.F.R.) Part 435, subpart A). The existing permit, issued by EPA Region 4 and published at 63 FR 55718 on October 16, 1998, and revised on March 14, 2001 at 63 FR 14988, authorizes discharges from exploration, development, and production facilities located in and discharging, to all Federal waters of the eastern portion of the Gulf of Mexico seaward of the outer boundary of the territorial seas. Today's draft NPDES permit covers existing and new source facilities in the Eastern Planning Area with operations located on Federal leases occurring in water depths seaward of 200 meters, occurring offshore the coasts of Alabama and Florida. The western boundary of the coverage area is demarcated by Mobile and Visoca Knoll lease blocks located seaward of the outer boundary of the territorial seas from the coasts of Mississippi and Alabama in the Central Planning Area (CPA).

In order to obtain coverage under the reissued general permit, all permittees covered under the previous NPDES general permit must have submitted a timely and complete written notice of intent (NOI) no later than October 31, 2003 (the expiration date of the previous NPDES general permit). All facility owners of newly acquired leases, on which a discharge will take place before the effective date of the reissued general permit (operating facilities) in the water depths seaward of 200 meters, must file a written NOI to be covered by the new general permit for existing and new sources no later than 14 days prior to discharge. Non-operational leases, i.e., those on which no discharges have taken place in the two (2) years prior to the effective date of the reissued general permit, are only eligible for coverage under the reissued general permit once the Exploration Plan Document or the Development Operational Coordination Document are submitted to EPA. Otherwise, their coverage under the previous general permit will terminate on the effective date of the reissued general permit. No NOIs will be accepted on non-operational or newly acquired leases until such time as an exploration plan or development production plan has been prepared for submission to Minerals Management Service (MMS). The NOI must contain the information set forth in 40 C.F.R. § 122.28(b)(2)(ii) and Part A.4 of the NPDES permit.

In accordance with Oil and Gas Extraction Point Source Category, Offshore Subcategory Effluent Guidelines and New Source Performance Standards (NSPS) published at 58 FR 12454 on March 4, 1993, and amended at 66 FR 6850 on January 22, 2001, EPA Region 4 is making a Supplemental Environmental Impact Statement (SEIS) available concurrently with the general permit for review during the public comment period that addresses potential impacts from facilities that may be defined as new sources in the context of a comprehensive offshore permitting strategy. As set forth in Section 2.4.2 of the final Environmental Impact Statement (EIS) (EPA 904/9-98-003), which was prepared for the previous NPDES general permit, the Regional Administrator has determined that the area shoreward of the 200 meter depth includes extensive live bottom and other valuable marine habitats and includes areas of biological concern, which should be subject to more stringent review based on the ocean discharge criteria under Section 403 of the Clean Water Act (CWA or the Act) and findings of the SEIS. Accordingly, individual permits will be issued for operating facilities on lease blocks traversed by and shoreward of the 200 meter water depth.

As proposed, this draft NPDES general permit includes, best conventional pollutant control technology (BCT), and best available technology economically achievable (BAT) limitations for existing sources and new source performance standards (NSPS) limitations for new sources as promulgated in the effluent guidelines for the offshore subcategory at 58 FR 12454 and amended at 66 FR 6850 (March 4, 1993 and January 22, 2001, respectively).

ADDRESSES: Persons wishing to comment upon or object to any aspects of this permit reissuance are invited to submit same in writing within sixty (60) days of this notice to the Water Management Division, U.S. EPA- Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960, Attention: Ms. Karrie-Jo Robinson-Shell.

Three public hearings have been scheduled. The first hearing will be held in Ocean Springs, MS on Tuesday, March 16, 2004, at 6:00 p.m. at the Gulf Coast Research Laboratory, 703 East Beach Drive. The second hearing will be held in Gulf Shores, AL on Wednesday March 17, 2004, at 6:00 p.m. at the Marriott Courtyard Gulf Shores Craft Farms, 3750 Gulf Shores Parkway. The third hearing will be held in Pensacola, FL, on Thursday, March 18, 2004, at 6:00 p.m. at the Booker T. Washington High School, 6000 College Parkway. A public notice announcing these hearings will be published in local newspapers at least 30 days prior to the hearings. Persons wishing to receive advance notification of these hearings directly are asked to submit that request to Ms. Ann Brown at the address above or via e-mail at: brown.anng@epa.gov.

DATES: Comments on this proposed action must be received by [insert date 60 calendar days after the date of publication in the FEDERAL REGISTER].

FOR ADMINISTRATIVE RECORD AND FURTHER INFORMATION: Contact Ms. Karrie-Jo Robinson-Shell, Offshore Oil and Gas Contact, at telephone (404) 562-9308 or at the following address: Water Management Division, NPDES and Biosolids Permits Section, U.S. EPA, Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

SUPPLEMENTAL INFORMATION:

I. Procedures For Reaching a Final Permit Decision

Pursuant to 40 C.F.R. § 124.13, any person who believes any condition of the permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments in full, supporting their position, by the close of the comment period. All comments on the draft NPDES general permits and the draft SEIS received within the 60-day period will be considered in the formulation of final determinations regarding the permit reissuance. In addition, public hearings will be held. See Public Hearing Notice section below for locations of public hearings in each city.

After consideration of all written comments and the requirements and policies in the CWA and appropriate regulations, the EPA Regional Administrator will make determinations regarding the permit reissuance. If the determinations are substantially unchanged from those announced by this notice, the Regional Administrator will so notify all persons submitting written comments. If the determinations are substantially changed, the Regional Administrator may issue a public notice indicating the revised determination.

A formal hearing is available to challenge any NPDES permit issued according to the regulations at 40 C.F.R. § 124.15 except for a general permit as cited at 40 C.F.R. § 124.71. Persons affected by a general permit may not challenge the conditions of a general permit as a right in further Agency proceedings. They may instead either challenge the general permit in court, or apply for an individual permit as specified at 40 C.F.R.

§ 122.21 as authorized at 40 C.F.R. § 122.28, and then request a formal hearing on the issuance or denial of an individual permit. Additional information regarding these procedures is available by contacting Mr. Kevin Smith, Associate Regional Counsel Office of Environmental Accountability at (404) 562-9525.

II. Procedures For Obtaining General Permit Coverage

Notice of Intent requirements for obtaining coverage for operating facilities are stated in Part I Section A.4 of the general permit. Coverage under the reissued general permit is effective upon receipt of notification of inclusion from the EPA Region 4, Director of the Water Management Division. EPA will act on the NOI within a reasonable period of time.

III. Exclusion of Non-Operational Leases

This permit does not apply to non-operational leases, i.e., those on which no discharge has taken place in the two (2) years prior to the effective date of the reissued general permit. EPA will not accept NOIs for such leases, and the general permit will not cover such leases. Non-operational leases will lose coverage under the previous general permit on the effective date of the reissued general permit. No subsequent exploration, development or production activities may take place on these leases until and unless the lessee has obtained coverage under the new general permit or an individual permit. EPA will not accept an NOI or individual permit application for non-operational or new acquired leases until such time as an Exploration Plan Document or the Development Operational Coordination Document has been prepared and submitted to MMS.

IV. State Water Quality Certification

Because state waters are not included in the area covered by the OCS general permit, its effluent limitations and monitoring requirements are not subject to state water quality certification under CWA Section 401. However, the states of Alabama, Florida and Mississippi have been provided a copy of this draft general permit to review and submit comments. A copy has also been provided to EPA Region 6 for their review.

V. State Consistency Determination

This Notice will also serve as Region 4's requirement under the Coastal Zone Management Act (CZMA) to provide all necessary information for the States of Mississippi, Alabama and Florida to review this action for consistency with their approved Coastal Management Programs. A copy of the consistency determination on the proposed activities is being sent to each affected State, along with draft copies of the draft NPDES general permit, Fact Sheet, preliminary Ocean Discharge Criteria Evaluation, a CWA Section 403(c) determination, and draft SEIS. Other relevant information is available upon request from each State for their review. Comments regarding State Consistency are invited in writing within 60 days of this notice to the Water Management Division, U.S. Environmental Protection Agency, Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960, Attention: Ms. Karrie-Jo Robinson-Shell.

VI. Public Hearing

Three (3) public hearings are being planned on this proposed action. The first hearing is scheduled for Tuesday March 16, 2004 at 6:00 p.m in Ocean Springs, Mississippi at the Marine Education Center and Aquarium. The second hearing is scheduled for Wednesday March 17, 2004 at 6:00 p.m. in Gulf Shores, Alabama at the Adult Education Center. The third hearing is scheduled for Thursday March 18, 2004 at 6:00 p.m. in Pensacola, Florida at the Booker T. Washington High School. Persons interested in obtaining directions to these hearing should contact Ms. Ann Brown at (404) 562-9288.

VII. Administrative Record

The draft NPDES general permit, fact sheet, preliminary Section 403(c) determination, SEIS and other relevant documents are on file and may be inspected any time between 8:15 a.m. and 4:30 p.m., Monday through Friday at the address shown below. Copies of the draft NPDES general permit, fact sheet, preliminary 403(c) determination, draft SEIS and other relevant documents may be obtained by writing the U.S. EPA, Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta,

Georgia 30303-8960, Attention: Ms. Karrie-Jo Robinson-Shell, or by calling (404) 562-9308. In addition, copies of the draft NPDES general permit and fact sheet may be downloaded at www.epa.gov/region4/water/permits.

VIII. Executive Order 12866

Under Executive Order 12866 (58 FR 51735 (October 4, 1993)) the Agency must determine whether the regulatory action is “significant”, and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines “significant regulatory action” as one that is likely to result in a rule that may: (1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health, or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order. OMB has exempted review of NPDES general permits under the terms of Executive Order 12866.

IX. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rule making requirements under the Administrative Procedures Act (APA) or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

Issuance of an NPDES general permit is not subject to rule making requirements, including the requirement for a general notice of proposed rule making, under APA Section 533 or any other law, and is thus not subject to the RFA requirements.

The APA defines two broad, mutually exclusive categories of agency action – “rules” and “orders.” APA Section 551(4) defines rule as “an agency statement of general or particular applicability and future effect designed to implement, interpret or prescribe law or policy or describing the organization, procedure, or practice or requirements of an agency ...” APA Section 551(6) defines orders as “a final disposition ... of an agency in a matter other than rule making but including licensing.” APA Section 551(8) defines “license” to “include ... an agency permit ...” The APA thus categorizes a permit as an order, which by the APA’s definition is not a rule. Section 553 of the APA establishes “rule making” requirements. APA Section 551(5) defines “rule making” as “the agency process for formulating, amending, or repealing a rule.” By its terms, Section 553 applies only to rules and not to orders, exempting by definition permits.

X. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their “regulatory actions” to refer to regulations. (See, e.g., UMRA Section 401, “Each agency shall ... assess the effects of Federal regulatory actions ... (other than to the extent that such regulations incorporate requirements specifically set forth in law).”) UMRA Section 102 defines “regulation” by reference to 2 U.S.C. 658 which in turn defines “regulation” and “rule” by reference to Section 601(2) of the RFA. That section of the RFA defines “rule” as “any rule for which the agency publishes a notice of proposed rule making pursuant to Section 553(b) of the APA, or any other law.”

As discussed in the RFA section of this notice, NPDES general permits are not “rules” by definition under the APA and thus not subject to the APA requirement to publish a notice of proposed rule making. NPDES general permits are also not subject to such a requirement under the CWA. While EPA publishes a notice to solicit public comment on draft general permits, it does so pursuant to the CWA Section 402(a)

requirement to provide an opportunity for a hearing. Therefore, NPDES general permits are not “rules” for RFA or UMRA purposes.

XI. Paperwork Reduction Act

The information collection required by this permit has been approved by OMB under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., in submission made for the NPDES permit program and assigned OMB control numbers 2040-0086 (NPDES permit application) and 2040-0004 [(NPDES Discharge Monitoring Reports(DMRs))].

Since this permit is very similar in reporting and application requirements and in discharges which are required to be monitored as the previous Eastern Gulf of Mexico OCS general permit (GMG280000) the paperwork burdens are expected to be nearly identical. When it issued the previous OCS general permit, EPA estimated it would take an affected facility three hours to prepare the request for coverage and 38 hours per year to prepare DMRs. It is estimated that the time required to prepare the request for coverage and DMRs for the reissued permit will be approximately the same.

James D. Giattina, Director
Water Management Division

FACT SHEET for Proposed NPDES General Permit

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FACT SHEET

I. Background Information Concerning General Permits and Draft Individual Permits

Section 301(a) of the Clean Water Act (CWA or the Act), U.S.C. 1311(a), provides that the discharge of pollutants to waters of the United States is unlawful except in accordance with the terms of an National Pollutant Discharge Elimination System (NPDES) permit. CWA Section 402, 33 U.S.C. 1342, authorizes EPA to issue NPDES permits allowing discharges on condition they will meet certain requirements, including CWA Sections 301, 304, and 401, 33 U.S.C. 1311, 1314, and 1341.

EPA may issue NPDES permits to operators of individual facilities or general permits to a class of similar dischargers within a discreet geographical area. See generally *NRDC v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977): 40 Code of Federal Regulations (C.F.R.) § 122.28. Issuance of general permits is not controlled by the procedural rules EPA uses for individual permits, but is instead subject to Section 4 of the Administrative Procedure Act (APA), 5 U.S.C. 553, as supplemented by EPA regulations, e.g., 40 C.F.R. § 124.58. EPA must, however, comply with the substantive requirements of the CWA without regard to whether it is issuing an individual or general NPDES permit. In accordance with 40 C.F.R. § 122.28(a)(4)(iii), any owner or operator authorized by a general permit may request to be excluded from the coverage of the general permit by applying for an individual permit. The owner or operator shall submit an application under 40 C.F.R. § 122.21, with reasons supporting the request, to the Director, Water Management Division, U.S. EPA-Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

A. Previous Outer Continental Shelf NPDES General Permit

The Regional Administrator for EPA Region 4 is today proposing to reissue the NPDES general permit for the Outer Continental Shelf (OCS) Gulf of Mexico (General Permit No. GMG280000) under Region 4 jurisdiction. The previous permit, published at 63 FR 55718 (October 16, 1998), issued for the Eastern Planning Area and extreme northeastern portion of the Central Planning Area by Region 4, expired on October 31, 2003.

B. Conclusions Regarding the Supplemental Environmental Impact Statement on Biological Communities in the Coastal Shelf and Shelf-Break Zone

At the time of issuance for the previous NPDES general permit, a final Environmental Impact Statement (EIS) was published. It concluded that, because of the abundance and sensitivity of the biological resources present from 200 meters of depth and shallower and potential secondary impacts, individual permits for these areas which incorporate permit stipulations on a case-by-case review would be more protective of the numerous biological communities present in the 200 meter water depths or shallower, and help ensure compliance with Section 403(c) of the CWA. This strategy required current, or proposed, oil and gas operations shoreward of the 200 meter water depth to seek individual existing source or new source permits, as appropriate. In order to update information used for the final EIS, a draft Supplemental Environmental Impact Statement (SEIS) has been prepared which reviews available data and studies on discharges from oil and gas facilities and the potential for these discharges resulting in impacts to benthic communities of short and long term duration. In particular, the SEIS includes additional information not available at the time of the previous NPDES general permit regarding the environmental impacts for the discharge of synthetic-based drilling fluids (SBFs) which adhere to drill cuttings. The draft SEIS concludes that the discharge of SBFs adhered to drill cuttings do not cause adverse environmental harm to habitats in water depths greater than 200 meters in the Gulf of Mexico.

C. Draft Eastern Gulf of Mexico NPDES General Permit

Today's NPDES general permit covers the Eastern Gulf of Mexico and authorizes discharges from exploration, development, and production facilities (existing sources or new sources) discharging to Federal waters of the United States. Region 4's coverage area for these general permits includes all discharges occurring in leases occurring in water depths seaward of 200 meters, occurring offshore the coasts of Alabama and

Florida. The western boundary of the coverage area is demarcated by Mobile and Visoca Knoll lease blocks located seaward of the outer boundary of the territorial seas from the coasts of Mississippi and Alabama in the Central Planning Area. The eastern boundary of the coverage area is demarcated by the Vernon Basin lease block area north of the 26° parallel (except for those areas under Congressional or Presidential moratorium) and in water depths seaward of 200 meters. This permit does not cover areas included under Congressional or Presidential moratorium for oil and gas activities in Federal waters.

1. New Sources

The Regional Administrator has determined, in accordance with 40 C.F.R. § 122.28(c), that the new source requirements in the general permit will apply to sources that meet the requirements defined at 40 C.F.R. § 122.2, which states that a new source is "any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which is commenced:

“(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such sources, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.”

If construction was commenced after March 4, 1993, the facility is a new source. Because drilling rigs are moved from site to site for several years and production platforms can be built on shore and transported to an offshore site, the actual construction of the equipment or facility can occur years before there is a discharge of pollutants from that equipment or facility at a particular site. Therefore, the definition of the "construction" of a new source must be addressed. The regulations at 40 C.F.R. § 122.29(b)(4) state:

"(4) Construction of a new source as defined under § 122.2 has commenced if the owner or operator has:

(i) Begun, or caused to begin as part of a continuous on-site construction program:

(A) Any placement, assembly, or installation of facilities or equipment; or

(B) Significant site preparation work including clearing, excavation or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new sources facilities or equipment; or

(ii) Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility engineering, and design studies do not constitute a contractual obligation under the paragraph."

EPA defines "significant site preparation work" as "the process of clearing and preparing an area of the ocean floor for purposes of constructing or placing a development or production facility on or over the site" (50 FR 34619). Therefore, development and production wells are new sources unless the site was prepared for the purposes of constructing or placing a development or production facility over that site before the promulgation of the effluent guideline for the offshore subcategory on March 4, 1993. Exploration activities are not considered significant site preparation work; therefore, exploration wells would not be new sources in any circumstance.

EPA regulations also define the term "site" at 40 C.F.R. § 122.2 as "the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity." EPA interprets the term "water area" to mean the "specific geographical location where the exploration, development, or production activity is conducted, including the water column and ocean floor beneath activities." Thus, if a new platform is built at or moved from a different location, it will be considered a new source when placed at the new site where its oil and gas activities take place. Even if the platform is placed adjacent to an existing platform, the new platform will still be considered a "new source" occupying a "new water" area, and therefore, a "new site" (50 C.F.R. 34618).

2. Existing Sources

All facilities not meeting the requirements of a new source must obtain coverage as an existing source under the general permit. Existing sources are those facilities where significant site preparation work has occurred, or development and production activity has taken place, on or before March 4, 1993. These same facilities, however, would become new sources if they moved to a new water area to commence production or development activities. Exploratory activities require existing source general permit coverage.

3. Application Procedures

Operators planning to discharge from operating facilities seaward of the 200 meter depth will be required to file a notice of intent (NOI), pursuant to 40 C.F.R. § 122.28(b)(2)(ii), to be covered by the general permit no later than 14 days prior to discharge and prior to the expiration of the general permit. Such notice fulfills the permit application requirements under federal regulations. The permittee will be covered under the appropriate new general permit (existing or new source) upon receipt of notification of inclusion from the Director. A discharger wanting to obtain coverage under a subsequent general permit must submit a new NOI no later than 14 days from the expiration date of this permit. If the NOI for coverage under a subsequent permit is timely and complete and EPA-Region 4 is unable to issue the intended subsequent permit, then by matter of law, you will be granted continued administrative coverage under this permit until such time that EPA issues a subsequent permit or determines to not reissue the permit. At that time, coverage under this permit ceases.

D. Individual Permits

All lease blocks with operating facilities traversed by, or shoreward of, the 200 meter isobath will be required to apply for and obtain individual permits in order to discharge into waters of the U.S. No individual permits will be issued for non-operational leases until an exploration plan document or a development production plan has been prepared for Mineral Management Service (MMS) and submitted to both MMS and EPA-Region 4.

There are two types of individual permits that will be issued. The first is an individual new source permit. The application requirements for new sources are set forth at 40 C.F.R. § 122.21(k) and (l). Prior to issuance of such permits, the National Environmental Policy Act (NEPA) of 1969 requires that an EIS or Environmental Assessment (EA) be prepared. In order to allow EPA to conduct that review, the applicant must submit information as set forth in 40 C.F.R. § 6.604(b). The Regional Administrator will then make and publish a determination as to whether the facility seeking a permit is a new source.

The second type of individual permit is for an existing source. Applicants shall submit the information required by 40 C.F.R. § 122.21(f), together with any additional information required to determine the appropriate permit limits based on ocean discharge criteria under section 403 of the CWA.

Permittees holding leases shoreward of the 200 meter depth will be given individual notice of the requirement to apply for an individual permit, a brief statement of the reasons therefore, a copy of the application form, and a deadline for filing the application. No applications will be accepted for non-operational or newly acquired leases until such time as an Exploration Plan, Development Operational Coordination

Document and/or Development Production Plan has been submitted to EPA. All permittees with operational facilities, i.e., leases on which a discharge has taken place within two (2) years of the effective date of the new general permit, who file a timely application will continue to be covered under the previous general permit until a final action has been taken on the individual permit application.

E. Oil and Gas Activities in the Eastern Gulf of Mexico

Historically, activity in the Eastern Gulf of Mexico has been less than that in areas west of EPA Region 4's jurisdiction. This was partly due to the demand for natural gas and economics associated with drilling costs necessary to reach the deep Norphlet and other producible commercial formations. As the price and demand for natural gas increases, along with the development of deep water drilling and producing technology, exploration activities in this area will continue. Since the issuance of the previous general permit, however, approximately 200 wells have been granted coverage in the Eastern Gulf of Mexico and most have been in water depths greater than 5,000 feet. During the last MMS lease sale held in December 2001, for Eastern Gulf of Mexico Lease Sale 181, MMS received 190 bids from 14 companies on 95 tracts out of the 256 offered. All 256 sale tracts were in deep water. MMS's next lease sale for blocks within Lease Sale Block 181 will be held in December 2003. Approximately 125 tracts will become available; all are located in depths greater than 6,000 feet.

II. Description of Activity and Facilities Which are Subject of the Draft Permit

The Oil and Gas Extraction Point Source Category (40 C.F.R. Part 435, subpart A) includes facilities engaged in field exploration, development and well production and well treatment. Exploration facilities are fixed or mobile structures engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs. A development facility is any fixed or mobile structure engaged in the drilling and completion of productive wells, which may occur prior to, or simultaneously with production operations. Production facilities are fixed or mobile structures engaged in well completion or used for active recovery of hydrocarbons from producing formations.

III. Nature of Discharges from Oil and Gas Operations and Effluent Limits

This general permit will authorize the following discharges to occur in water depths seaward of the 200 meter water depth: water-based drilling muds; water- and synthetic-based drill cuttings; produced water; well treatment fluids; workover fluids; completion fluids; deck drainage, sanitary wastes; domestic wastes, desalinization unit discharges, blowout preventer fluid; fire control system test water; non-contact cooling water; uncontaminated ballast water; uncontaminated bilge water; excess cement slurry; and mud, cuttings and cement at the seafloor. The permit will authorize discharges from facilities engaged in field exploration, development and well production and well treatment, for offshore operations for both existing and new sources occurring seaward of the 200 meter water depth.

The applicable effluent guidelines are found at 40 C.F.R. Part 535, subpart A, which include Best Available Technology Economically Achievable (BAT) limitations for existing sources and New Source Performance Standards (NSPS) that are based on the best available demonstrated technology for new sources. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies; therefore, Congress directed EPA to consider the best demonstrated process changes, in-plant controls, and end-of-process control and treatment technologies that reduce pollution to the maximum extent feasible for implementation by new sources.

The U.S. Coast Guard regulations are incorporated into the permit to be consistent with international regulations for the disposal of food and incinerator wastes.

EPA is specifically soliciting information to further characterize present and anticipated activities on the eastern Gulf of Mexico OCS. EPA Region 4 may revise any provisions of the permit in response to public comments when it issues the final permit.

IV. Statutory Basis for Permit Conditions

Sections 301(b), 304, 306, 307, 308, 401, 402, 403 and 501 of the Clean Water Act (The Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987), 33 U.S.C. 1311, 1314(b), (c) and (e), 1316, 1317, 1318 and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217; 101 Stat. 7 Pub. L. 100-4 ("the Act" or CWA), and the U.S. Coast Guard Regulations (33 C.F.R. Part 151), provide the basis for the permit conditions contained in general permit. The general requirements of these sections fall into three categories, technology bases, ocean discharge criteria and section 308 of the CWA, which are described in sections A - C , below.

A Technology Bases

1. BAT and BCT Effluent Limitations and New Source Performance Standards

As of March 31, 1989, all permits are required by section 301(b)(2) of the Act to contain effluent limitations for all categories and classes of point sources which: (1) control toxic pollutants (40 C.F.R. § 401.15) and non-conventional pollutants through the use of Best Available Technology Economically Achievable (BAT), and (2) represent Best Conventional Pollutant Control Technology (BCT). BCT effluent limitations apply to conventional pollutants (pH, BOD, oil and grease, suspended solids, and fecal coliform).

BAT and BCT effluent limitations guidelines and New Source Performance Standards (NSPS) for the Offshore Subcategory were proposed on August 26, 1985 (50 FR 34592) and signed on January 15, 1993 (58 FR 12454, March 4, 1993 and 66 FR 6850, January 22, 2001). The new guidelines were established under the authority of sections 301(b), 304, 306, 307, 308, and 501 of the CWA. The new guidelines were also established in response to a Consent Decree entered on April 5, 1990 (subsequently modified on May 28, 1993) in *NRDC v. Reilly*, D. D.C. No. 79-3442 (JHP) and are consistent with EPA's Effluent Guidelines Plan under Section 304(m) of the CWA (57 FR 41000, September 8, 1992). The general permit will cover both new and existing sources. Permit limits and conditions for existing sources are based on BAT and BCT effluent limitations and incorporate additional discharge restrictions based on environmental data. Requirements for new sources are based on the NSPS based on the best available demonstrated technology, and incorporate additional discharge restrictions based on environmental data. Since the March 4, 1993, Offshore Effluent Guidelines and New Source Performance Standards basically set BAT limitations equal to NSPS, the proposed limitations, conditions, and monitoring requirements for today's proposed permit limits for existing and new sources are identical.

2. Previous NPDES General Permit Limitations

Per Section 402(o)(1) of the Clean Water Act and 40 C.F.R. § 122.44(l), when a permit is reissued, the effluent limitations must be as stringent as the final effluent limitations of the previous permit unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Based on new information not available at the time of issuance for the previous general permit, the new general permit contains new limits pertaining to the discharge of non-aqueous-based drilling fluids (NAFs) that adhere to drill cuttings. Part V of the fact sheet discusses the new or changed permit limitations and conditions.

B. Ocean Discharge Criteria

Section 403 of the CWA requires that an NPDES permit for a discharge into marine waters located seaward of the inner boundary of the territorial seas (i.e., state and federal offshore waters) be issued in accordance with guidelines for determining the potential degradation of the marine environment. These guidelines, referred to as the Ocean Discharge Criteria (40 C.F.R. Part 125, subpart M), and section 403 of the Act are intended to "prevent unreasonable degradation of the marine environment and to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (49 FR 65942, October 3, 1980).

If EPA determines that the discharge will cause unreasonable degradation, an NPDES permit will not be issued. If a definitive determination of no unreasonable degradation

cannot be made because of insufficient information, EPA must then determine whether a discharge will cause irreparable harm to the marine environment and whether there are reasonable alternatives to on-site disposal. To assess the probability of irreparable harm, EPA is required to make a determination that the discharger, operating under appropriate permit conditions, will not cause permanent and significant harm to the environment during a monitoring period in which additional information is gathered. If data gathered through monitoring indicate that continued discharge may cause unreasonable degradation, the discharge shall be halted or additional permit limitations established.

A preliminary Ocean Discharge Criteria Evaluation has been drafted. Region 4 has determined that discharges occurring under the draft NPDES general permit, incorporating appropriate effluent limits and monitoring requirements, will not cause unreasonable degradation for existing and new source dischargers occurring in areas seaward of the 200 meter water depth.

C. Section 308 of the Clean Water Act

Under section 308 of the CWA and 40 C.F.R. § 122.44(i), the Director of the U.S. EPA-Region 4 Water Management Division must require a discharger to conduct monitoring to determine compliance with effluent limitations and to assist in the development of effluent limitations. EPA has included several monitoring requirements in the permit, as listed in the Table 1 of this fact sheet.

V. Summary of New or Changed Permit Limitations and Conditions

The following discussion is intended to provide a summary of the parts of the proposed permit which are substantively different from the previous 1998 general permit. For a detailed discussion of requirements and their bases, please refer to Section VI of this fact sheet. Many of the new and changed requirements result from amendments of the final Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory published in January, 2001 (66 FR 6850) (see 40 C.F.R. Part 435, subpart A) that address the discharge of synthetic-based drilling fluids (SBFs) and other non-aqueous drilling fluids from oil and gas drilling operations into waters of the United States.

A. Discharge of Non-Aqueous-Based Drilling Fluids

BAT and BCT requirements in the aforementioned amendments to 40 C.F.R. Part 435, state that the discharge of non-aqueous based drilling fluids (NAFs) be prohibited, except that which adheres to cuttings and as a small volume discharge. NAFs may be used as a carrier fluid (transporter fluid), lubricity additive or pill in water-based drilling fluids and discharged with those drilling fluids, provided the discharge continues to meet the no free oil and 96-hour LC₅₀ toxicity limits, and the pill is removed prior to discharge.

B. Drill Cuttings Associated with Non-Aqueous-Based Drilling Fluids

The discharge of SBFs and other NAFs associated with drill cuttings from oil and gas drilling operations are controlled, as follows:

1. Drilling Fluid Stock Limitations (C₁₆-C₁₈ Internal Olefin, C₁₂-C₁₄ esters and C₈ ester)

BAT limitations and NSPS require that the synthetic materials which form the base fluid of the SBFs shall meet limitations and standards on polynuclear aromatic hydrocarbons (PAH) content, sediment toxicity and biodegradation. In addition, there are limits on the stock barite for mercury and cadmium content. Materials not meeting the stock limitations must be substituted for ones that will, or not be discharged. The supplier(s) should be able to document that the stock base fluid being used on the well will meet the appropriate limits.

a. PAH Content

PAHs are comprised of toxic priority pollutants (fluorene, naphthalene, phenanthrene, etc.). However, typical SBFs do not contain PAHs, but the traditional base fluids of oil-based drilling fluids (OBFs) of diesel and mineral oil may contain up to 10% PAH. The PAH limitation is a mass ratio of 1×10^{-5} , and is determined using EPA Method 1654A, in conjunction with the following equation:

$$\text{PAH mass ratio} = \frac{\text{mass (g) of PAH (as phenanthrene)}}{\text{mass (g) of stock base fluid}}$$

The limit is used to help discriminate between acceptable and non-acceptable base fluids. Monitoring for this parameter shall be performed at least once per year on each fluid blend.

b. Sediment Toxicity

Sediment toxicity in the base fluid will be used as a non-conventional pollutant parameter and as an indicator for toxic pollutants and non-conventional pollutants. By establishing limits on toxicity, the use of less toxic drilling fluids and additives is encouraged. Generally, SBFs are less toxic than OBFs, but within the SBF category, some base fluids are more toxic than others. A 10-day LC_{50} sediment toxicity test (ASTM E1367-92, or the most current EPA approved method) is used to determine compliance with a sediment toxicity ratio permit limit of 1.0. The ratio calculation is as follows:

$$\text{Sediment Toxicity Ratio} = \frac{10\text{-day } LC_{50} \text{ of } C_{16}\text{-}C_{18} \text{ internal olefin}}{10\text{-day } LC_{50} \text{ of stock base fluid}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend.

c. Biodegradation Rate

The biodegradation in base fluids is an indicator of the extent, in level and duration, of the toxic effect of toxic pollutants and non-conventional pollutants present in the base fluids. The biodegradation parameter correlates with rate of recovery of the sea bottom where SBFs associated cuttings have been discharged. The biodegradation rate ratio of the stock base fluid will be measured using International Standards Organization (ISO) Method 11734:1995 (or the most current EPA approved method) with a limit of 1.0. The ratio equation is:

$$\text{Biodegradation rate ratio} = \frac{\text{Cumulative gas production (ml) of } C_{16}\text{-}C_{18} \text{ internal olefin at 275 days}}{\text{Cumulative gas production (ml) of stock base fluid at 275 days}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend.

d. Mercury and Cadmium in Stock Barite

There shall be no discharge of drilling fluids to which barite has been added, if such barite contains mercury in excess of 1.0 mg/kg (dry weight) or cadmium in excess of 3.0 mg/kg (dry weight). The permittee shall analyze a representative sample of all stock barite used once, prior to drilling each well, and submit the results for total mercury and cadmium on the Discharge Monitoring Report (DMR).

2. Discharge Limitations

BAT and NSPS require that the discharge of SBFs associated drill cuttings be controlled by limiting both fluid toxicity (i.e., suspended particulate phase toxicity), sediment toxicity and the percentage of base fluids retained on the cuttings.

a. Suspended Particulate Phase (SPP) Toxicity

The minimum 96-hour LC_{50} of the SPP Toxicity Test shall be 3% by volume. Monitoring shall be once per month and once again at the end-of-well drilling. The approved methodology is contained in Appendix 2 of 40 C.F.R. Part 435, subpart A.

b. Drilling Fluid Sediment Toxicity

The use of sediment toxicity test at the point of discharge is a practical indicator of the drilling fluid toxicity immediately prior to discharge. The test will control non-conventional pollutants found in some drilling fluid components that are added to the base fluid to formulate the desired SBF. The test used on the stock base fluid can be modified to a 96-hour test to allow the operator to continue drilling operations while the sediment toxicity test is performed on the discharged cuttings associated drilling fluid. The approved test method is ASTM E1367-92. The drilling fluid sediment toxicity ratio is determined using the following equation:

$$\text{Drilling Fluid Sediment Toxicity ratio} = \frac{4\text{-day LC}_{50} \text{ of } C_{16}\text{-}C_{18} \text{ internal olefin}}{4\text{-day LC}_{50} \text{ of drilling fluid removed from the drill cuttings at the solids control equipment}}$$

Monitoring for this parameter shall be once per month.

c. Base Fluid Retained on Cuttings

The BAT limitation and NSPS to control the retention of SBFs on cuttings is based on a ratio of base fluid on wet cuttings to the mass of wet cuttings averaged over the entire footage of the well drilled with SBF. The limitation and standard controls the quantity of drilling fluid discharged with the drill cuttings. Both toxic pollutants and non-conventional pollutants would be controlled by this limitation. This limitation will also control the biodegradation rate of the discharged SBF, and the potential for cuttings to develop piles and mats which are harmful to the benthic environment.

For NAFs that meet the stock limitation of $C_{16}\text{-}C_{18}$ internal olefin, the maximum weighted mass ratio averaged over all NAF well sections shall not exceed 6.9 g NAF base fluid per 100 g of wet drill cuttings. For NAFs that meet the stock limitation of $C_{12}\text{-}C_{14}$ ester or C_8 ester, the maximum weighted mass ratio averaged over all NAF well sections shall not exceed 9.4 g NAF base fluid per 100 g of wet drill cuttings.

In accordance with effluent guidelines for SBFs and other NAFs, a default value of 14% of base fluid retained on drill cuttings may be used for determining compliance with the base fluids retained on cutting limit where seafloor discharges are made from dual gradient drilling. In those cases, 15% will be used as a default value for the mass fraction of cuttings discharged at the sea floor. The default values will be averaged with results obtained from daily monitoring of the surface discharge to determine compliance with the retention limitations. Monitoring for this parameter shall be at least once per day, or one sample per 500 feet drilled, up to three samples per day.

3. Prohibitions

a. Free Oil Prohibition

Under this prohibition, drill cuttings may not be discharged when the associated drilling fluid would fail the static sheen test. This limitation is intended to minimize the formation of sheens on the surface of the receiving water by oil and grease, which separates from the SBF. The oleaginous matrices of SBFs do not disperse in water and rise to the surface.

b. Formation Oil Prohibition

Formation oil is an indicator pollutant for the many toxic and priority pollutant pollutants present in naturally occurring formation (crude) oil. These pollutants include benzene, toluene, ethylbenzene, naphthalene, phenanthrene, and phenol. Since SBF fluids are recycled and used more than once, the SBF will need to be tested twice to determine that it is free of formation oil. The SBF should be tested before initial use and again during the drill cuttings discharge phase on the fluid recovered by the solids control system.

c. Discharge Near Areas of Biological Concern

The previous general permit prohibited drilling activities within 1000 meters of areas of biological concern (ABC). Based on new information, it may possible to drill within 1000 meters of ABC and maintain the integrity of the area. Therefore, the proposed permit will prohibit drilling activities within 1000 meters of ABC, unless otherwise authorized by the Director of the Water Management Division, EPA-Region 4.

d. Discharge Near Federally Designated Dredge Material Disposal Sites

To ensure the biological integrity of aquatic communities near ocean disposal sites, this new permit conditions prohibits the discharge of any wastewaters within 1000 meters of a Federally Designated Dredge Material Disposal Site. The list of sites located in the general permit area are cited at 40 C.F.R. § 228.15(f).

C. Special Conditions

1. De Minimis Discharges of Non-Aqueous Based Drilling Fluids

De minimis discharges of NAFs not associated with cuttings shall be contained to the extent practicable to prevent discharge. Allowable de minimis discharges can include

wind blown drilling fluids from the pipe rack and minor drips and splatters around mud handling and solids control equipment. Such de minimus discharges are not likely to be measurable and are not considered in the base fluids retained on cuttings limit.

2. Small Volume Discharges

Small volume drilling fluid discharges which are associated with cuttings, and for which discharge is authorized, are; (1) displaced interfaces, (2) accumulated solids in sand traps, (3) pit clean-out solids and/or, (4) centrifuge discharges made while changing mud weight. Operators discharging small volume NAF-cuttings which do not occur during a NAF-cuttings discharge sampling interval must either; (1) measure the mass percent NAF base fluid retained on the cuttings for each small volume NAF-cuttings discharge, or (2) use a default value of 25% NAF base fluid retained on the cuttings to determine compliance.

D. Best Management Practices Plan and Site Specific BMPs

The requirement to develop and implement a Best Management Practices (BMP) plan has been incorporated into the general permit in accordance with Sections 304(e) and 316(b) of the CWA in order to reduce the likelihood of spills or other releases oil or oil contaminated water, water treatment chemicals, cleaning materials and biocides that may enter waters of the United States. Both facility-wide and specific BMPs for NAFs have been incorporated. Requirements have also been included for permittees to evaluate cooling water intake structures to determine opportunities for reducing impingement and entrainment of organisms.

E. New or Revised Definitions

The following definitions were either incorporated based on amendments of the final Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory in January, 2001 (66 FR 6850), or included for clarification purposes.

1. Annual average means the average of all discharges sampled and/or measured during a calendar year in which daily discharges are sampled and/or measured, divided by the number of discharges sampled and/or measured during such year.
2. Applicable effluent standards and limitations means all state and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards or performance, toxic effluent standards and prohibitions, and pretreatment standards.
3. Areas of Biological Concern (revised) for water within the territorial seas (shoreline to three miles offshore) are those defined as “no activity zones” for biological reasons by the states of Alabama, Florida and Mississippi. For offshore waters seaward of three miles, areas of biological concern include “no activity zones” defined by the Department of Interior (DOI) for biological reasons, or identified by EPA in consultation with the DOI, the states, or other interested federal agencies, as containing biological communities, features or functions that are potentially sensitive to discharges associated with the oil and gas industry.
4. Base fluid means the continuous phase or suspending medium of a drilling fluid formation.
5. Base fluid retained on cuttings refers to the American Petroleum Institute Recommended Practice 13B-2 supplemented with the specifications, sampling methods, and averaging method for retention values provided in 40 C.F.R. Part 435, subpart A, Appendix 7.
6. Biodegradation rate refers to the ISO method no. 11734:1995 (or the most current EPA approved method), “Water quality - Evaluation of the ultimate anaerobic biodegradation of organic compounds in digested sludge-method by measurement of the biogas production (1995 edition),” supplemented with modifications in Appendix 4 of 40 C.F.R. Part 435, subpart A.
7. Blow-Out Preventer Control Fluid means fluid used to actuate the hydraulic equipment on the blow-out preventer or subsea production wellhead assembly.
8. Boiler Blowdown means discharges from boilers necessary to minimize solids build-up in the boilers, including vents from boilers and other heating systems.

9. Bulk Discharge means any discharge of a discrete volume or mass of effluent from a pit tank or similar container that occurs on a one-time, infrequent or irregular basis.
10. C₁₂-C₁₄ Ester and C₈ Ester means the fatty-acid/2-ethylhexyl esters with carbon chain lengths ranging from 8 to 16 and represented by the Chemical Abstracts Service (CAS) No. 135800-37-2.
11. C₁₆-C₁₈ Internal Olefin means a 65/35 blend, proportioned by mass, of hexadecene and octadecene, respectively. Hexadecene is an unsaturated hydrocarbon with a carbon chain length of 16, an internal double carbon bond, and is represented by the CAS No. 26952-14-7. Octadecene is an unsaturated hydrocarbon with a carbon chain length of 18, an internal double carbon bond, and is represented by CAS No. 27070-58-2.
12. C₁₆-C₁₈ Internal Olefin Drilling Fluid means a C₁₆-C₁₈ internal olefin drilling fluid formulated as specified in Appendix 8 of 40 C.F.R. Part 435, subpart A.
13. Deck Drainage means any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains including drip pans and work areas within facilities subject to this permit.
14. Development Drilling means the drilling of wells required to efficiently produce a hydrocarbon formation or formations.
15. Development Facility means any fixed or mobile structure that is engaged in the drilling of productive wells.
16. Diesel oil (revised) refers to the grade of distillate fuel oil, as specified in the American Society of Testing and Materials Standard Specifications for Diesel Fuel Oils, no. D975-91, that is typically used as the continuous phase in conventional oil-based drilling fluids.
17. Domestic waste (revised) means materials discharged from sinks, showers, laundries, safety showers, eye-wash stations, hand-wash stations, fish cleaning stations, and galleys located within facilities subject to 40 C.F.R. Part 435, subpart A.
18. Drill cuttings (revised) means the particles generated by drilling into subsurface geologic formations, including cured cement, and carried out from the wellbore with the drilling fluid. Examples of drill cuttings include small pieces of rock varying in size and texture from fine silt to gravel. Drill cuttings are generally generated from solids control equipment and settle out and accumulate in quiescent areas in the solids control equipment or the equipment processing drilling fluid (i.e., accumulated solids).
- a. Wet drill cuttings means the unaltered drill cuttings and adhering drilling fluid and formation oil carried out from the wellbore with the drilling fluid.
 - b. Dry drill cuttings means the residue remaining in the retort vessel after completing the retort procedure specified in Appendix 7 of 40 C.F.R. Part 435, subpart A.
19. Drilling fluid (revised) means the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation.
- a. Water-based drilling fluid means the continuous phase and suspending medium for solids is a water-miscible fluid, regardless of the presence of oil.
 - b. Non-aqueous drilling fluid means the continuous phase and suspending medium for solids is a water-immiscible fluid, such as oleaginous materials (e.g., mineral oil, paraffinic oil, C₁₆-C₁₈ internal olefins, and C₈-C₁₆ fatty acid/2-ethylhexyl esters).
 - i. Oil-based means the continuous phase of the drilling fluid consists of diesel oil, mineral oil, or some other oil, but contains no synthetic material or enhanced mineral oil.
 - ii. Enhanced mineral oil-based means the continuous phase of the drilling fluid is enhanced mineral oil.
 - iii. Synthetic-based means the continuous phase of the drilling fluid is a synthetic material or a combination of synthetic materials.

20. End-of- well Sample means the sample taken after the final log run is completed and prior to bulk discharge. This term does not apply to any discharges other than water based drilling fluids.
21. Enhanced mineral oil as applied to enhanced mineral-oil based drilling fluid means a petroleum distillate which has been highly purified and is distinguished from diesel oil in having a lower PAH content. Typically, conventional mineral oils have a PAH content on the order of 0.35 weight percent expressed as phenanthrene, whereas enhanced mineral oils typically have a PAH content of 0.001 or lower weight percent PAH expressed as phenanthrene.
22. Exploratory facility means any fixed or mobile structure subject to 40 C.F.R. Part 435, subpart A, that is engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs.
23. Formation oil means the oil from a producing formation which is detected in the drilling fluid, as determined by Gas Chromatography/Mass Spectrometer (GC/MS) compliance assurance method specified in Appendix 5 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed before being shipped offshore, and as determined by the Reverse Phase Extraction (RPE) method specified in Appendix 6 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed at the offshore point of discharge. Detection of formation oil by the RPE method may be confirmed by the GC/MS method, and the results of the GC/MS compliance assurance method shall supercede those of the RPE method.
24. Maximum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the maximum concentration allowed as measured in any single sample of the barite for determination of cadmium and mercury content.
25. Maximum for any one day as applied to BCT and BAT effluent limitations and NSPS for oil and grease in produced water means the maximum concentration allowed as measured by the average of four grab samples collected over a 24-hour period that are analyzed separately. Alternatively, for BAT and NSPS the maximum concentration allowed may be determined on the basis of physical composition of the four grab samples prior to a single analysis.
26. Maximum weighted mass ratio averaged over all NAF well sections for BAT effluent limitations and NSPS for base fluid retained on cuttings means the weighted average base fluid retention for all NAF well sections, as determined by the API Recommended Practice 13B-2, using the methods and averaging calculations presented in Appendix 7 of 40 C.F.R. Part 435, subpart A.
27. Method 1654A refers to the method "PAH Content of Oil by High Performance Liquid Chromatography with a UV Detector," which was published in Methods for the Determination of Diesel, Mineral and Crude Oils in Offshore Oil and Gas Industry Discharges, EPA-821-R-92-008 (incorporated by reference and available from the National Technical Information Service).
28. Minimum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the minimum 96-hour LC_{50} value allowed as measured in any single sample of the discharged waste stream. Minimum as applied to BCT effluent limitations and NSPS for sanitary wastes means the minimum concentration value allowed as measured in any single sample of the discharged waste stream.
29. Ninety-Six (96)-hour LC_{50} means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.
30. No discharge of free oil means that waste streams may not be discharged that contain free oil as evidenced by monitoring method specified for that particular stream, e.g., deck drainage or miscellaneous discharges cannot be discharged when they would cause a film or sheen upon or discoloration of the surface of the receiving water; drilling fluids or cuttings may not be discharged when they fail the static sheen test defined in Appendix 1 of subpart A of 40 C.F.R. Part 435.

31. Operational waste means all cargo associated waste, maintenance waste, cargo residues, and ashes and clinkers from incinerators and coal burning boilers.
32. PAH (as phenanthrene) means polynuclear aromatic hydrocarbons reported as phenanthrene.
33. Parameters that are regulated by this permit and listed with approved methods of analysis in Table 1.B at 40 C.F.R. § 136.3 are defined as follows:
- a. Cadmium means total cadmium.
 - b. Chlorine means total residual chlorine.
 - c. Mercury means total mercury.
 - d. Oil and Grease means total recoverable oil and grease.
34. Produced Sand (revised) means the slurried particles used in hydraulic fracturing, the accumulated formation sands and scales particles generated during production. Produced sand also includes desander discharge from the produced water waste stream, and blowdown of the water phase from the produced water treating system.
35. Produced Water (revised) means the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process.
36. Production facility means any fixed or mobile structure subject to this subpart that is either engaged in well completion or used for active recovery of hydrocarbons from producing formations. It includes facilities that are engaged in hydrocarbon fluids separation even if located separately from wellheads.
37. Sediment Toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to the ASTM E1367-92 method: Standard Guide for Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods with *Leptocheirus plumulosus* as the test organism and sediment preparation procedures specified in Appendix 3 of 40 C.F.R. Part 435, subpart A.
38. Solids Control Equipment means shale shakers, centrifuges, mud cleaners, and other equipment used to separate drill cuttings and/or stock barite solids drilling fluid recovered from the wellbore.
39. SPP toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to bioassay test procedure presented in Appendix 2 of subpart A of 40 C.F.R. Part 435.
40. Static sheen test means the standard test procedure that has been developed for this industrial subcategory for the purpose of demonstrating compliance with the requirement of no discharge of free oil. The methodology for performing the static sheen test is presented in Appendix 1 of subpart A of 40 C.F.R. Part 435.
41. Stock barite means the barite that was used to formulate a drilling fluid.
42. Stock base fluid means the base fluid that was used to formulate a drilling fluid.
43. Synthetic material as applied to synthetic-based drilling fluid means material produced by the reaction of specific purified chemical feedstock, as opposed to the traditional base fluids such as diesel and mineral oil which are derived from crude oil solely through physical separation processes include fractionation and distillation and/or minor chemical reactions such as cracking and hydro processing. Since they are synthesized by the reaction of purified compounds, synthetic materials suitable for use in drilling fluids are typically free of PAHs but are sometimes found to contain levels of PAH up to 0.001 weight percent PAH expressed as phenanthrene. Internal olefins and vegetable esters are two examples of synthetic materials suitable for use by the oil and gas extraction industry in formulating drilling fluids. Internal olefins are synthesized from the isomerization of purified straight-chain (linear) alpha olefins. C₁₆₋₁₈ linear alpha olefins are unsaturated hydrocarbons with the carbon to carbon double bond in the terminal position. Internal olefins are typically formed from heating linear alpha

olefins with a catalyst. The feed material for synthetic linear alpha olefins is typically purified ethylene. Vegetable esters are synthesized from the acid-catalyzed esterification of vegetable fatty acids with various alcohols. EPA listed these two branches of synthetic fluid base materials to provide examples, and EPA does mean to exclude other synthetic materials that are either in current use or may be used in the future. A synthetic-based drilling fluid may include a combination of synthetic materials.

44. Treatment Chemicals means biocides, corrosion inhibitors, or other chemicals which are used to treat seawater or freshwater to prevent corrosion or fouling of piping or equipment. Chemicals or compounds approved by EPA-Region 4 in accordance with Part I.C.6 ("Toxic Compounds") are not considered treatment chemicals.

45. Uncontaminated freshwater means freshwater which is discharged without the addition of treatment chemicals. Included are; (1) discharges of excess freshwater that permit the continuous operation of fire control and utility lift pumps, (2) excess freshwater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in fire protection, and (4) water used to pressure test new piping.

46. Uncontaminated seawater (revised) means seawater which is returned to the sea without the addition of treatment chemicals. Included are; (1) discharges of excess seawater which permit the continuous operation of fire control and utility lift pumps, (2) excess seawater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in fire protection, (4) water used to pressure test new piping and (5) non-contact cooling water which has not been treated with biocides.

47. Well completion fluids means salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production.

48. 96-hour LC₅₀ means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

F. Toxic Compounds (Including Compounds Used In Subsea Operations)

The permittee shall notify the Director, Water Management Division, EPA-Region 4 in writing at least 14 days prior to planned use and discharge of any chemical, other than chlorine or other product previously reported to the Director, which may be toxic to aquatic life. Such notification shall include:

1. Name and general composition of the chemical;
2. Frequencies of use;
3. Quantities to be used;
4. Proposed discharge concentrations; and
5. Any acute and chronic toxicity data (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms*, or the most current edition).

Discharge of materials subject to this part is prohibited prior to EPA approval.

G. Notification Requirements

The requirements to submit a Notice to Drill (NTD) and a Notice of Commencement of Operations (NCO) have been replaced with a requirement for operators to submit a "No Activity" list with the quarterly submittal of Discharge Monitoring Reports (DMRs). Operators were previously required to submit an NTD and an NCO in order for EPA to track drilling activities. The "No Activity" list will serve as less burdensome and more concise way to notify EPA of all the operations that are in a no discharge status.

H. Sampling Frequency of Free Oil for Drilling Fluids and Cuttings

Based on new information that shows that it is impractical to sample for free oil prior to discharge, the frequency for sampling free oil for drilling fluids and drill cuttings has been changed from “prior to discharges on each day of discharge” to “once per week.”

I. Frequency of Submittal of Discharge Monitoring Reports

As required in the previous general permit, facilities with discharges will fill out a DMR each month; however, the frequency for submittal of the DMR is being reduced from monthly to quarterly.

J. Test Methods for Analyzing Cadmium and Mercury in Stock Barite

A correction has been made in the EPA test methods used for the analysis of cadmium and mercury in stock barite. The previous permit required operators use the flame and flameless Atomic Absorption Spectrophotometry (AAS) method listed in 40 C.F.R. Part 136 to analyze mercury and cadmium in barite. These methods are suited for constituents in the a water phase, and are therefore inappropriate for use in analyzing barite, which is a solid material. The proposed permit requires use of EPA methods used for solid wastes - EPA SWA 846 method no. 7471A for mercury and EPA SW A846 method no. 6010B for cadmium.

K. Discharges Associated with Dual Gradient Drilling Operations

Requirements for operators employing dual gradient drilling have been incorporated into the draft permit. The new permit conditions are based on requirements in effluent guidelines for the discharge of SBFs (ref. 66 FR 6850, dated January 22, 2001).

L. Use of High Resolution Acoustic Data in Lieu of Photodocumentation

This new provision allows the use of high resolution acoustic data (sidescan sonar) obtained by the leasees or operators for lease or site-specific surveys in compliance with Minerals Management Service requirements as per Notice To Leasees (NTL) No. 2002-G08 *Information Requirements for Exploration Plans and Development Operations Coordination Documents* in lieu of photodocumentation required under the 1998 Outer Continental Shelf (OCS) General Permit. Sidescan sonar data will be obtained by survey methods described in NTL No. 98-20 *Shallow Hazards Requirements*. EPA will consider all natural or artificial hard structure detected by acoustic data to be live-bottom unless other data (i.e., video, still photographs, diver visual etc.) determines otherwise. Leasees and operators choosing to continue providing photodocumentation will continue to conduct such surveys as per NTL No. 99-G16, *Live-Bottom Surveys and Reports*. Final siting of proposed outfalls must be no further than 500 meters from the proposed surface location covered by imaging survey.

M. Miscellaneous Discharges

This new provision has been included to allow the following miscellaneous discharges, based on prior approval from EPA (see Part III.3.6 -“Toxic Compounds Used in Subsea Operations”): subsea wellhead preservation fluids, subsea production control fluids, umbilical steal tune storage fluid, leak tracer fluid, riser tensioner fluid and hydrates fluid used in subsea hydrostatic tests.

N. Produced Water Toxicity

The proposed permit requires operators that use a horizontal diffuser or multiple discharge ports (e.g., vertical diffuser) in order to increase mixing to determine the critical dilution using the CORMIX2 model (for horizontal diffusers) or the CORMIX1 model (for vertical diffusers).

O. Seabed Surveys

Operators who discharge drill cuttings which are generated using NAFs shall conduct seabed surveys at each location where such a discharge occurs. Results of the seafloor surveys shall be submitted to EPA Region 4 with the DMR no later than two years after completion of the drilling operations at the site.

At a minimum, the survey must include; the area and thickness of drill cuttings depositions on the seafloor, analysis of the toxicity of the cuttings depositions on the seafloor, analysis of contaminants present in the deposited cuttings, and analysis of the benthic populations present at the site of cuttings deposition. Monitoring shall be conducted twice at each site where drill cuttings generated using NAFs are discharged. The first survey is required to commence within two weeks after completion of drilling

operations. A second survey shall commence one year after completion of the first survey. In addition, both surveys shall be accompanied by sampling of the seafloor benthic populations and analysis for contaminant at a site which is located near the discharge, but sufficiently far as to be unaffected by the discharged drill cuttings or any drilling fluids retained on the cuttings.

Operators shall also monitor the discharge of drill cuttings while drilling is conducted. That monitoring will include; the dates discharge takes place, the prevailing current during discharge, the volumes and types of drilling fluids retained on cuttings and discharged, the volume of cuttings discharged, and a chemical analysis of drilling fluids used at the facility.

Alternatively, operators required to conduct seafloor surveys under this permit may submit a plan for an equivalent industry-wide seafloor monitoring study to EPA Region 4 for approval. The alternative industry-wide study shall be designed to provide information on discharges of cuttings generated using non-aqueous based drilling fluids at a minimum of eight locations where the discharge occurs. At least three of those discharge locations must be in deep water (greater than 1000 feet). Monitoring shall include the areal extent and thickness of cuttings deposition, the sediment chemistry and mineralogy, and the extent of anoxic effects resulting from cuttings discharges. Sampling conducted in shallow areas shall include extensive biological sampling intended to measure community structural changes relative to cuttings discharges as well as the physical and chemical monitoring performed in deep water. Detailed information regarding the volume and types of drilling fluids and the cuttings discharged shall also be recorded and reported with the results of such a study. If EPA Region 4 approves the equivalent seafloor monitoring study, monitoring conducted under the study shall constitute compliance with the seafloor survey requirements of this permit for those operators who participate. The industry-wide survey currently underway will be given consideration for meeting this requirement.

P. Standard Conditions for NPDES Permits

The standard language for all NPDES permits has been updated.

Q. Clarifications

- a. The draft permit clarifies that operators that have passed six consecutive bi-monthly toxicity tests, during a 12-month period, for produced water discharges, and therefore have reduced the testing frequency from bi-monthly to once every six months, may continue testing once every six months. If at any time the semi-annual testing indicates a failure, the toxicity testing frequency may be increased, based upon notification by EPA.
- b. The draft permit clarifies requirements for obtaining coverage under an administratively continued permit and for obtaining coverage under a reissued permit.
- c. The permit states, unless otherwise specified, that all samples must be taken at “the nearest accessible location prior to discharge, or prior to combining with any other wastewaters”.

VI. Permit Conditions

A. Determination of Discharge Conditions

The determination of appropriate conditions for each discharge was accomplished through:

1. consideration of technology-based effluent limitations to control conventional pollutants under BCT,
2. consideration of technology-based effluent limitations to control toxic and non-conventional pollutants under BAT,
3. consideration of technology-based effluent limitations to control toxic and non-conventional pollutants under NSPS,
4. consideration of more stringent permit conditions of existing general permit in accordance with Section 402(o)(1) of the CWA.

5. evaluation of the Ocean Discharge Criteria for discharges in the Offshore Subcategory (given conditions 1 thru 4 are in place).

EPA first determines which technology-based limits are required and then evaluates the effluent quality expected to result from these controls. If water quality violations could occur as a result of discharge, EPA must include water quality-based limits in the permit. The permit limits will reflect the most stringent limits (technology-based or water quality-based). Finally, an Ocean Discharge Criteria Evaluation (ODCE) has been prepared to identify any additional impacts created by these proposed discharges.

General area and depth related requirements and CWA Section 403(c) flow rate requirements for are discussed in section VI.B. and VI.C of this fact sheet. For convenience, these conditions and the regulatory basis for each are cross-referenced by discharge in Table 1 below:

TABLE 1 - Summary of CWA Statutory Basis for Wastewater Discharges

Discharge and Permit Conditions	CWA Statutory Basis / Existing Sources	CWA Statutory Basis / New Sources
<u>Water-Based Drilling Muds & Cuttings</u> Flow Rate Limitations Volume (bbl/day) Toxicity of Drilling Muds No Free Oil Discharge No Oil Based Fluids Discharge Mercury & Cadmium in Barite > 200 meters - No Unreasonable Degradation > 1000 meters from Area of Biological Concern - No Unreasonable Degradation	§ 403 § 308 BPJ-BAT BPJ-BCT, BPJ-BAT BPJ-BCT, BPJ-BAT BAT § 403 § 403	§ 403 § 308 NSPS NSPS NSPS NSPS § 403, EIS § 403

<u>Non-Aqueous Based Drilling Fluids (NAFs) and Cuttings</u> No discharge of NAFs (except that which adheres to cuttings & small volume discharges) Volume (bbls/day) Mercury & Cadmium in Barite Polynuclear Aromatic Hydrocarbons (base fluid) Sediment Toxicity (base fluid and effluent) Biodegradation Rate (base fluids) No Free Oil Discharge No Formation Oil Discharge Effluent Toxicity Base fluid retained on cuttings No discharge of cuttings generated using contaminated drilling fluids, containing diesel oil or mineral oil > 1000 meters from Area of Biological Concern No Unreasonable Degradation No Discharge of Floating Solids or Foam No Discharge of Halogenated Phenol Compounds	BCT § 308 BAT BAT BAT BAT BAT BAT BAT BAT BCT BAT BAT § 403 BPJ BPJ BPJ BPJ BPJ	NSPS § 308 NSPS NSPS NSPS NSPS NSPS NSPS NSPS NSPS NSPS NSPS NSPS § 403 BPJ BPJ BPJ BPJ BPJ
<u>Produced Water</u> Monitor Flow (MGD) Oil & Grease Whole Effluent Toxicity (WET) > 200 meters - No Unreasonable Degradation > 1000 meters from Area of Biological Concern - No Unreasonable degradation	§ 308 BCT, BAT BPJ § 403 § 403 BPJ	§ 308 NSPS BPJ § 403, EIS § 403 BPJ

<u>Well Treatment, Completion, & Workover Fluids</u> Monitor Frequency/Flow Rate No Free Oil Oil & Grease > 200 meters - No Unreasonable Degradation	§ 308 BPT, BCT BAT § 403	§ 308 NSPS NSPS § 403, EIS
<u>Deck Drainage</u> Monitor Frequency/Flow Rate No Free Oil > 200 meters - No Unreasonable Degradation	§ 308 BCT, BAT § 403	§ 308 NSPS § 403, EIS
<u>Produced Sand</u> No Discharge Allowed	BCT, BAT	NSPS
<u>Sanitary Waste (manned by 10 or more)</u> Residual Chlorine > 200 meters - No Unreasonable Degradation	BAT § 403	NSPS § 403, EIS
<u>Sanitary Waste (manned by 9 or less)</u> No Floating Solids > 200 meters - No Unreasonable Degradation	BCT § 403	NSPS § 403, EIS
<u>Domestic Waste</u> No Foam No Floating Solids > 200 meters - No Unreasonable Degradation	BAT BCT/BAT § 403	NSPS NSPS § 403, EIS

<u>Well Test Fluids</u>		
Monitor Frequency/Flow Rate	§ 308	§ 308
No Free Oil	BCT, BAT	NPS
> 200 meters - No unreasonable Degradation	§ 403	§ 403, EIS
<u>Miscellaneous Wastes:</u>		
Desalination Unit Discharge, Blow Out Preventer Fluids, Uncontaminated Ballast Water, Muds Cuttings & Cement at Seafloor, Uncontaminated Sea Water, Fire Test Water, Boiler Blowdown, Excess Cement Slurry, Diatomaceous Earth Filter Media, Uncontaminated Fresh Water, Noncontaminated Fresh Water		
No Free Oil	BCT, BAT	BPJ
> 200 meters - No unreasonable degradation	§ 403	§ 403

B. Area and Depth-Related Requirements

The discharge restrictions and requirements listed below are necessary to ensure that unreasonable degradation of these areas will not occur as discussed above in Part IV.B. of this fact sheet (Ocean Discharge Criteria) and are largely unchanged from the previous permit to this proposed Discharge within the area described below the 26⁰ parallel is prohibited due to a order which establishes a moratorium on drilling activity on leases in that area.

Pertaining to all discharges, this NPDES general permit only provides coverage for discharges occurring:

- In water depths greater than 200 meters (as measured from mean low water)
- For leases not under any moratorium.

C. CWA Section 403(c) Requirements for Muds and Cuttings

Flow rates: In addition to restrictions on all discharges imposed under Section 403(c) of the CWA and discussed in section IV.B. of this fact sheet, discharges of water-based muds for both new and existing sources are limited to the following maximum rate. This limitation is identical to that contained in the previous general permit.

Flow = 1,000 bbl/hr on total water-based muds

This limit was established in the previous permit because reliable dispersion data are available only up to this discharge rate and because this rate did not represent any serious operational problem based on comments received from the industry and discharge monitoring reports.

VII. Other Legal Requirements

A. National Environmental Policy Act

Under the direction of the National Environmental Policy Act (NEPA), EPA and MMS entered into a Memorandum of Understanding to coordinate efforts on EISs for areas covered by NSPS before EPA issues final permits covering discharges. During the permitting process for the previous general permit, EPA completed a draft EIS, and accepted public comment on that document. A final EIS was prepared before issuance of the final permit. EPA also coordinated with MMS for complying with NEPA for specific new source (production) projects. As part of the permitting process for this reissuance of the general permit, EPA completed a draft supplemental EIS.

B. Oil Spill Requirements

Section 311 of the Clean Water Act prohibits the discharge of oil and hazardous materials in harmful quantities. Routine discharges that are in compliance with NPDES permits are excluded from the provisions of section 311. However, the permits do not preclude the institution of legal action or relieve permittees from any responsibilities, liabilities, or penalties for other, unauthorized discharges of oil and hazardous materials that are covered by section 311 of the CWA.

C. Endangered Species Act

The Endangered Species Act (ESA) allocates authority to, and administers requirements upon, federal agencies regarding endangered species of fish, wildlife, or plants that have been designated as critical. Its implementing regulations (50 C.F.R. Part 402) require the Regional Administrator to ensure, in consultation with the Secretaries of Interior and Commerce, that any action authorized, funded or carried out by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat [40 C.F.R. § 122.49(c)]. Implementing regulations for the ESA establish a process by which agencies consult with one another to ensure that issues and concerns of both the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) collectively are addressed. The NMFS and USFWS have responded to EPA's initiation of the coordination process under the regulations set

forth by Section 7 of the Endangered Species Act. The 36 species identified by NMFS and USFWS as threatened or endangered species within the permit coverage area have been assessed for potential effects from the activities covered by the draft permit in a biological assessment incorporated in the draft SEIS. This biological assessment has been submitted to the NMFS and USFWS along with the draft permit for consistency review and concurrence on the Region's finding of no adverse effect. The Region's finding is appended to the draft SEIS.

D. Ocean Discharge Criteria Evaluation

For discharges into waters located seaward of the inner boundary of the territorial seas, the CWA at Section 403, requires that NPDES permits consider guidelines for determining the potential degradation of the marine environment. The guidelines, or Ocean Discharge Criteria (40 C.F.R. Part 125, subpart M), are intended to "prevent unreasonable degradation of the marine environment and to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (45 FR 65942, October 3, 1980). After all available comments and information are reviewed, the final 403 determination will be made.

A preliminary ODCE determination of no unreasonable degradation has been made by Region 4. The potential effects of discharges under the proposed permit limitations and conditions are assessed in this draft document available from Region 4. The ODCE states that, based on the available information, the permit limitations are sufficient to determine that no unreasonable degradation should result from the permitted discharges.

E. Coastal Zone Management Act

The coverage area of the draft general permit includes only Federal waters of the eastern Gulf of Mexico. However, the state waters of Florida, Alabama, and Mississippi are potentially affected by activities covered under the permit. Therefore, the coastal zone management plans of Florida, Alabama, and Mississippi have been reviewed for consistency and consultation with the states for consistency concurrence has been initiated. A consistency determination for each state and the draft permit have been submitted for state review.

F. Marine Protection, Research, and Sanctuaries Act

No marine sanctuaries as designated by the Marine Protection, Research, and Sanctuaries Act exist in the area to which the OCS permit applies.

G. Executive Order 12291

OMB has exempted this action from the review requirements of Executive Order 12291 pursuant to section 8(b) of that order.

H. Paperwork Reduction Act

The information collection required by these permits has been approved by OMB under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, in submission made for the NPDES permit program and assigned OMB control numbers 2040-0086 (NPDES permit application) and 2040-0004 (DMRs).

All facilities affected by these permits must submit an NOI requesting coverage under the Eastern Gulf of Mexico OCS general permit no. GMG280000. EPA estimates that it will take an affected facility three hours to prepare the request for coverage.

All affected facilities will be required to submit DMRs. EPA estimated the DMR completion burden for the permit to be 36 hours per facility per year.

I. Regulatory Flexibility Act

After review of the facts presented above, I hereby certify, pursuant to the provisions of 5 U.S.C. 605(b), that this proposed general permit will not have a significant impact on a substantial number of small entities. This certification is based on the fact that the vast majority of the parties regulated by this permit have greater than 500 employees and are not classified as small businesses under the Small Business Administration regulations

established at 49 FR 5024 *et seq.* (February 9, 1984). For those operators having fewer than 500 employees, this permit issuance will not have significant economic impact. These facilities are classified as Major Group under Standard Identification Classification Code 13 - Oil and Gas Extraction, Crude Petroleum and Natural Gas.

J. Unfunded Mandates Reform Act

Section 201 of the Unfunded Mandates Reform Act, (UMRA), P.L. 104-4, generally requires Federal agencies to assess the effects of their "regulatory actions" on State, local, and tribal governments and the private sector. This proposed permit is not a rule which is subject to the requirements of UMRA.

VIII. Proposed Schedule For Permit Issuance

Proposed Permit to Federal Register for Public Notice - Week of January 12, 2004

Public Hearings dates and location:

- March 16, 2004 at 6:00 pm in Ocean Springs, MS at the Gulf Coast Research Laboratory
- March 17, 2004 at 6:00 pm in Gulf Shores, AL at the Marroitt Courtyard Gulf Shores Craft Farms
- March 18, 2004 at 6pm in Pensacola, Florida at Booker T. Washington High School

- | | |
|-----------------------------------|-------------------------|
| Close Comment Period | - March 19, 2004 |
| Complete Review of Comments | - Date To Be Determined |
| Consider Issuance of Final Permit | - Date To Be Determined |

Dated:

James D. Giattina, Director
Water Management Division

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Appendix A

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Authorization To Discharge Under the National Pollutant Discharge Elimination System

In compliance with the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq.), operators of lease blocks located in Outer Continental Shelf (OCS) Federal waters in the Eastern portion of the Gulf of Mexico seaward of 200 meters with existing source or new source discharges originating from exploration or development and production operations are authorized to discharge to receiving waters in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV and V, and appendices t hereof.

Operators of operating facilities within the National Pollutant Discharge Elimination System (NPDES) general permit coverage area must submit written notification to the Regional Administrator, prior to discharge, that they intend to be covered by either the existing or new source provisions of the general permit (See Part I.A.3). Upon receipt of notification of inclusion by the Regional Administrator, owners or operators requesting coverage are authorized to discharge under the general permit. Operators of lease blocks within the general permit coverage area who fail to notify the Regional Administrator of intent to be covered by this general permit are not authorized under the general permit to discharge pollutants from their potential new or existing source facilities.

This permit does not apply to non-operational leases, i.e., those on which no discharge has taken place in two (2) years prior to the effective date of the reissued general permit. EPA will not accept Notices of Intent (NOIs) from such leases, and these general permits will not cover such leases. Non-operational leases will lose general permit coverage on the effective date of this reissued general permit.

This permit shall become effective at [time], Eastern Standard Time, on [Month, Day, 20].

Coverage under the previous general permit issued on October 16, 1988, shall terminate on the effective of this permit, unless the owner/operator submitted an NOI to be covered under an administratively continued general permit prior to the expiration date (October 31, 2003), or an application for an individual permit. If a permit application is filed, the coverage under the previous general permit terminates when a final action is taken on the application for an individual permit.

This permit and the authorization to discharge shall expire [time], Eastern Standard Time, on 5 years from date of issuance.

Signed this [day] day of [month], Year.

Director, Water Management Division, U.S. EPA, Region 4.

Part I. Requirements for NPDES Permits

A. Permit Applicability and Coverage Conditions

1. Operations Covered

This permit establishes effluent limitations, prohibitions, reporting requirements, and other conditions for discharges from oil and gas facilities engaged in production, field exploration, drilling, well completion, and well treatment operations from potential new sources and existing sources.

The permit coverage area includes Federal waters in the Gulf of Mexico seaward of the 200 meter water depth for offshore Alabama and Florida in the Eastern Planning Area, and seaward of the outer boundary of the territorial seas for offshore Mississippi and Alabama in the Central Planning Area. This permit only covers facilities located in and discharging to the Federal waters listed above and does not authorize discharges from facilities in or discharging to the territorial sea (within three miles of shore) of the Gulf coastal states or from facilities defined as "coastal" or "onshore" (see 40 C.F.R., Part 435, subparts C and D).

2. Operations Excluded

Any operator who seeks to discharge drill fluids, drill cuttings or produced water within 1000 meters of an area of biological concern (ABC) is ineligible for coverage under this general permit and must apply for an individual permit.

Any operator with leases which are currently under moratorium are excluded from inclusion under this general permit.

No coverage will be extended to non-operational leases.

3. General Permit Applicability

In accordance with 40 C.F.R. §§ 122.28(b)(3) and 122.28(c), the Regional Administrator may require any person authorized by this permit to apply for and obtain an individual NPDES permit when:

- a. The discharge(s) is a significant contributor of pollution;
- b. The discharger is not in compliance with the conditions of this permit;
- c. A change has occurred in the availability of the demonstrated technology or practices for the control or abatement of pollutants applicable to the point sources;
- d. Effluent limitation guidelines are promulgated for point sources covered by this permit, which were not already subject to an effluent guideline;
- e. A Water Quality Management Plan containing requirements applicable to such point source is approved;
- f. It is determined that the facility is located in an area of biological concern.
- g. Circumstances have changed since the time of the request to be covered so that the discharge is no longer approximately controlled under the general permit, or either a temporary or permanent reductions or elimination of the authorized discharge is necessary.

The Regional Administrator may require any operator authorized by this permit to apply for an individual NPDES permit only if the operator has been notified in writing that a permit application is required.

Any operator authorized by this permit may request to be excluded from the coverage of this general permit by applying for an individual permit. Such operator shall submit an application together with the reasons supporting the request to the Regional Administrator no later than 180 days before an activity is scheduled to commence on the lease block. When an individual NPDES permit is issued to an operator otherwise subject to this permit, the applicability of this permit to the owner or operator is automatically terminated on the effective date of the individual permit.

A source excluded from coverage under this general permit solely because it already has an individual permit may request that its individual permit be revoked, and that it be considered for coverage by this general permit. Revocation of the individual permit will occur upon approval of coverage (see Part I.A.4, below).

4. Notification Requirements (Existing Sources and New Sources)

A written NOI to be covered in accordance with the general permit requirements shall state whether the permittee is requesting coverage under the requirements of an existing source or requirements for new source, as well as the following information:

- a. the legal name and address of the owner or operator;
- b. the facility name and location, including the lease block assigned by the Department of Interior, or if none, the name commonly assigned to the lease area;
- c. the number and type of facilities and activity proposed within the lease block;
- d. the waters into which the facility will be discharging; including a map with longitude and latitude of the facility location and of the expected discharges identified by the nomenclature used in Part I.B.1 - 11. Additional information may be requested by the Director regarding miscellaneous discharges.
- e. the date on which the owner/operator commenced on-site construction, including:
 - i. any placement assembly or installation of facilities or equipment; or
 - ii. the clearing or removal of existing structures or facilities;
- f. the date on which the facility commenced exploration activities at the site;
- g. the date on which the owner/operator entered into a binding contract for the purchase of facilities or equipment intended to be used in its operation within a reasonable time (if applicable);
- h. the date on which the owner/operator commenced development; and
- i. the date on which the owner/operator commenced production.
- j. technical information on the characteristics of the sea bottom in accordance with MMS Notice to Leasees (NTL) no. 98-20, *Shallow Hazard Requirements*, or the most current Mineral Management Service (MMS) guidelines for shallow hazard investigation and analysis within 1000 meters of the discharge point.
- k. MMS live bottom survey in accordance with MMS NTL No. 99-G16, *Live-Bottom Surveys and Reports*, or most current MMS guidelines for live-bottom surveys and reports, including facilities in less than 100 meters water depth in the Central Planning Area. Information obtained in compliance with NTL No. 2003-G17 *Information Requirements for Exploration Plans and Development Operations Coordination Documents, Appendix C*, may be used in lieu of photodocumentation. High-resolution (sidescan sonar) benthic imaging of the area within 1000 meters of the discharge point, shall be obtained using guidance in NTL No. 98-20 *Shallow Hazards Requirements*. Operators wishing to continue to provide Photodocumentation will continue to conduct such surveys as per NTL No. 99-G16, *Live-Bottom Surveys and Reports*.

Final siting of proposed outfalls must be no further than 500 meters from the proposed surface location covered by imaging survey.

l. the type of drilling fluids to be used - water-based and/or synthetic-based.

All NOIs must be received no later than 14 days prior to the expiration date of this permit and shall be signed in accordance with 40 C.F.R. § 122.22. EPA will act on the NOI in a reasonable period of time.

5. Operational Facilities

a. Change in designation from existing source to new source.

Operators obtaining coverage under the existing source general permit for exploration activities (existing source) must send a new NOI for coverage of development and production activities as new source 14 days prior to commencing such operations. All NOIs requesting coverage should be sent by certified mail to: Director, Water Management Division, U.S. EPA-Region 4, Sam Nunn Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

b. "No Activity" Notification

For any drilling activity for which no discharge is occurring, the operator shall submit a "No Activity" list each calendar quarter along with the quarterly submittal of the DMR. The No Activity list shall include:

- (i) the assigned NPDES general permit number assigned to the facility,
- (ii) the lease block designation and,
- (iii) a certification statement signed by an official of the company:

All NOIs, and No Activity lists, and any subsequent reports required under this permit, shall contain a signed certification statement (see Part II.D.12) and shall be sent by certified mail to the following address: Director, Water Management Division, U.S. EPA- Region 4, Sam Nunn Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

6. Non-Operational facilities

Non-operational facilities are only eligible for coverage under this new general permit after submittal of an Exploration Plan Document or the Development Operational Coordination Document is prepared for MMS and submitted to both MMS and EPA. No NOI will be accepted from either a non-operational or newly acquired lease until such time as an Exploration Plan, Development Operational Coordination Document or Development Production Plan has been prepared for MMS.

7. Termination of Operations

Lease block operators shall notify the Director (at the address above) within 60 days after the permanent termination of discharges from their facility.

8. Intent to be Covered by a Subsequently Issued Permit

This permit shall expire on [five (5) years from the effective date of issuance]. An NOI requesting subsequent coverage under the reissuance of this general permit must be submitted no later than the expiration date this permit. If reissuance of this general permit does not occur before its expiration date and the permittee has submitted a timely and complete NOI, continued coverage under this permit will be allowed until the effective date of the reissued general permit. If the permittee is notified by EPA of the need to submit application forms for an individual permit and a timely and complete NOI was submitted, continued coverage under this general permit will be allowed until the effective date of the individual permit issued to the applicable facility. If the initial NOI(s) requesting coverage under this permit was submitted within one (1) year of the expiration date of this permit and the information is still current, the permittee may resubmit that NOI(s) with a letter explaining their intent. Permittees that fail to notify the Director, during the term of this permit, of their intent to be covered by a subsequently issued permit cannot obtain continued authorization to discharge after the expiration date

of this permit and will be operating without NPDES permit coverage until they apply for and obtain coverage under the subsequently issued general permit or apply for and receive an effective individual NPDES permit. All NOIs requesting coverage under a subsequently issued general permit should be sent by certified mail to: Director, Water Management Division, U.S. EPA, Region 4, Sam Nunn Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

B. Effluent Limitations and Monitoring Requirements for New and Existing Sources

The following limitations and monitoring requirements are summarized in Part V, Table 1 of this permit.

1. Drilling Fluids

a. Prohibitions

- i. Non-Aqueous Based Drilling Fluids [including Synthetic-Based Drilling Fluids (SBFs)]. There shall be no discharge of NAFs, except that which adheres to cuttings, or which are considered de minimus discharges (see Part I.D.1) or as small volume discharges (see Part I.D.2).

Exception - NAFs may be used as a carrier fluids (e.g., transporter fluid), lubricity additive or pill in water-based drilling fluids, and may be discharged with those drilling fluids provided the discharge continues to meet the no Free oil limit, the 96-hour LC₅₀ toxicity limits, and the pill is removed prior to discharge.

- ii. Oil-Based Drilling Fluids. There shall be no discharge of oil-based drilling fluids and inverse emulsion drilling fluids.

- iii. Oil-Contaminated Drilling Fluids. There shall be no discharge of drilling fluids to which waste engine oil, cooling oil, gear oil or any lubricants which have been previously used for purposes other than borehole lubrication have been added.

- iv. Diesel Oil. There shall be no discharge of drilling fluids to which any diesel oil has been added as a lubricant or pill.

- v. No Discharge Near Areas of Biological Concern. Unless otherwise authorized by the Director, there shall be no discharge of drilling fluids and cuttings from those facilities within 1000 meters of an area of biological concern.

- vi. No Discharge Near Federally Designated Material Ocean Disposal Sites. Unless otherwise authorized by the Director, there shall be no discharge of any drilling fluids, drill cuttings or wastewaters from those facilities within 1000 meters of a Federally Designated Material Ocean Disposal Site. See 40 C.F.R. § 128.15(f) for a list of sites in the general permitting area.

b. Limitations

- i. Mineral Oil. Mineral oil may be used only as a carrier fluid (transporter fluid), lubricity additive, or pill. If mineral oil is added to a water-based drilling fluid, the drilling fluid may not be discharged unless the 96-hr LC₅₀ of the drilling fluid is greater than 30,000 ppm using the Suspended Particulate Phase (SPP) Toxicity Test and the sample passes the static sheen test for free oil. The analytical methods for the SPP Toxicity Test and Free Oil are contained in Part I.B.1(b)(3) and (4) below. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters.

- ii. Cadmium and Mercury in Barite. There shall be no discharge of drilling fluids to which barite has been added if such barite contains mercury in excess of 1.0 mg/kg (dry weight) or cadmium in excess of 3.0 mg/kg (dry weight). The permittee shall analyze a representative sample of each supply of stock barite prior to drilling each well and submit the results for total mercury and cadmium on the (DMR. If more than one well is being drilled at a site, new analyses are not required for subsequent wells, provided that no new supplies of barite have been received since the previous analysis. In this case, the results of the previous analysis should be used for completion of the DMR. Alternatively, the permittee may provide certification, as documented by the supplier(s), that the barite being used on the well will meet the above limits. The concentration of the mercury and cadmium in the barite shall be reported on the DMR as documented by the supplier. Analyses shall be conducted by EPA Solid Waste 846 methods 7471A for mercury and 6010B for cadmium and the results shall be expressed in mg/kg (dry weight).
- iii. Toxicity. Discharged water-based drilling fluids shall meet both a daily minimum and a monthly average minimum effluent toxicity limitation of 30,000 ppm (by volume), using a volumetric mud-to-water ratio of 1 to 9. The analytical method is cited in 40 C.F.R. Part 435, Appendix 2 of subpart A, entitled, "Drilling Fluid Toxicity Test." Monitoring shall be performed at least once per month by grab sample taken from beneath the shale shaker for both the daily minimum and the monthly average minimum. In addition, an end-of-well sample is required (see definitions). Results of toxicity tests must be reported on the monthly DMRs. Copies of the laboratory reports must also be submitted with the DMRs. Samples for this parameter must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters.
- iv. Free Oil. There shall be no discharge of drilling fluids that fail the static sheen test. Monitoring shall be performed once per week using the static sheen test method in accordance with the method provided in Part V.A.3, as published in 40 C.F.R. Part 435, Appendix 1 of subpart A. The results of each sheen test must be recorded and the number of observations of a sheen must be reported on each monthly DMR.
- v. Maximum Hourly Discharge Rate. The maximum discharge rate (water-based drilling fluids) shall not exceed 1,000 barrels per hour. The maximum hourly discharge rate for each month must be recorded and reported on the monthly DMR in barrels/hour.

c. Monitoring Only Requirements

In addition to the above limitations, the following monitoring and reporting requirements also apply to drilling fluids discharges.

- i. Drilling Fluids Inventory. The permittee shall maintain a precise chemical inventory of all constituents and their total volume, or mass, added downhole for each well. Information shall be recorded and retained on site for no less than the term of this permit.
- ii. Volume. The total monthly volume (bbl/month) of bulk discharged drilling fluids must be estimated and recorded. The volume shall be reported on the monthly DMR.

iii. Oil Content. There is no numeric limitation on the oil content (e.g., mineral oil and/or crude oil introduced into the drilling fluid) of discharged drilling muds, except that muds containing any waste oil, or diesel oil as a lubricity agent shall not be discharged. However, note that the oil added shall not cause a violation of either the toxicity or free oil limitations for water-based drilling fluids. Compliance with this permit condition shall be determined by taking a weekly grab sample, when discharging, from the same mud system being observed for the static sheen (free oil) test.

2. Drill Cuttings

Note: The permit prohibitions and limitations that apply to drilling fluids also apply to fluids that adhere to drill cuttings. Any permit condition that applies to the drilling fluid system, therefore, also applies to cuttings discharges. Monitoring requirements, however, may not be the same.

a. Prohibitions

i. Cuttings from Oil-Based Drilling Fluids. The discharge of cuttings is prohibited when they are generated while using an oil-based or invert emulsion mud.

ii. Cuttings from Oil Contaminated Drilling Fluids. There shall be no discharge of cuttings that are generated using drilling fluids that contain waste engine oil, cooling oil, gear oil or any lubricants which have been previously used for purposes other than borehole lubrication.

iii. Cuttings Generated Using Drilling Fluids Which Contain Diesel Oil. There shall be no discharge of drill cuttings generated using drilling fluids to which any diesel oil has been added as a lubricant.

iv. Cuttings Generated Using Mineral Oil. The discharge of cuttings generated using drilling fluids which contain mineral oil is prohibited except when the mineral oil is used as a carrier fluid (transporter fluid), lubricity additive, or pill.

v. No Discharge Near Areas of Biological Concern. Unless otherwise authorized by the Director, there shall be no discharge of drill cuttings from those facilities within 1000 meters of an Area of Biological Concern.

vi. No Discharge Near Federally Designated Material Ocean Disposal Sites. Unless otherwise authorized by the Director, there shall be no discharge of any drilling fluids, drill cuttings or wastewaters from those facilities within 1000 meters of a Federally Designated Material Ocean Disposal Site. See 40 C.F.R. § 128.15(f) for a list of sites in the general permitting area.

vii. Cuttings Generated Using Synthetic-Based Drilling Fluid. There shall be no discharge of non-aqueous based drilling fluid, except that which adheres to cuttings, de minimus discharges (see Part I.D.1) and small volume discharges (see Part I.D.2).

Exception - NAFs may be used as a carrier fluid (transporter fluid), lubricity additive or pill in water based drilling fluids and discharged with those drilling fluids provided the discharge continues to meet the no free oil and 96-hour LC₅₀ toxicity limits, and a pill is removed prior to discharge.

b. Limitations

i. Mineral Oil. There shall be no discharge of mineral oil.

Exception - Cuttings from a water-based mud system may be discharged when mineral oil pills or mineral oil lubricity additives have been introduced if they meet the limitations below for toxicity and free oil.

ii Free Oil. No free oil shall be discharged. Monitoring shall be performed on cuttings discharges once per week using the static sheen test method in accordance with the method provided in Part V.A.3. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. There shall be no discharge of cuttings that fail the static sheen test. The results of each sheen test must be recorded and the number of observations of a static sheen must be reported on each monthly DMR.

iii. Suspended Particulate Phase Toxicity. Discharged cuttings shall meet both a daily minimum and a monthly average minimum effluent toxicity limitation of at least 30,000 ppm (by volume), using a volumetric mud-to-water ratio of 1 to 9. The analytical method is cited in 40 C.F.R. Part 435, Appendix 2 of subpart A, entitled, "Drilling Fluid Toxicity Test." Monitoring shall be performed at least once per month by taking a grab sample from beneath the shale shaker for both the daily minimum and the monthly average minimum limits. The toxicity test may be satisfied by the same sample used for the drilling fluid. In addition, an end-of-well sample is required (see definitions). Results of toxicity tests must be reported on the monthly DMRs. Copies of the laboratory reports also must be submitted with the DMRs.

c. Discharge Limitations Applicable to Synthetic- Based Drill Cuttings

All the limits for drill cuttings in Part I.B.2.(b), above apply to synthetic-based drill cuttings.

i. Formation Oil. There shall be no discharge of formation oil.

Monitoring of the drilling fluids shall be performed, as follows:

(1). Once prior to drilling using the gas chromatography/mass spectrometry test method specified in Appendix 5 of 40 C.F.R. Part 435, subpart A. Alternatively, the permittee may provide certification, as documented by the supplier(s) that the drilling fluid being used on the well contains no formation oil.

(2). Once per week during drilling using the Reverse Phase Extraction test method specified in Appendix 6 of 40 C.F.R. Part 435, subpart A.

All test results shall be reported on the monthly DMR.

ii. Drilling Fluid Sediment Toxicity Ratio. The sediment toxicity test ratio shall not exceed 1.0 and shall be calculated based on the following:

$$\text{Drilling Fluid Sediment Toxicity Ratio} = \frac{\text{4-day LC}_{50} \text{ of } C_{16}\text{-}C_{18} \text{ internal olefin}}{\text{4-day LC}_{50} \text{ of drilling fluid removed from the drill cuttings at the solids control equipment}}$$

The approved test method is ASTM method no. E1367-92 (or the most current EPA approved method) and monitoring for this parameter shall be once per month by a grab sample. The sample for the drilling fluid retained on cuttings shall be taken at the solids control equipment.

iii. Base Fluid Retained on Cuttings. For NAFs that meet the stock limitation of C_{16} - C_{18} internal olefin, the maximum weighted mass ratio averaged over all non-aqueous-based drilling fluid well sections shall not exceed 6.9 g NAF per 100 g of wet drill cuttings. For NAFs that meet the stock limitation of C_{12} - C_{14} esters or C_8 ester, the

maximum weighted mass ratio averaged over all NAF well sections shall not exceed 9.4 g non-aqueous-based drilling fluid per 100 g of wet drill cuttings. A default value of 14% of base fluid retained on drill cuttings may be used for determining compliance with the base fluids retained on cutting limit where seafloor discharges are made from dual gradient drilling. In those cases 15% will be used as a default value for the mass fraction of cuttings discharged at the sea floor. The default values will be averaged with results obtained from daily monitoring to determine compliance with the retention limitations. Monitoring for this parameter shall be once per day by grab sample, or one sample for every 500 feet drilled, up to three samplings per day, using the API Retort method specified in 40 C.F.R. Part 435, subpart A of Appendix 7.

d. Drilling Fluid Stock Limitations (C₁₆-C₁₈ Internal Olefin, C₁₂-C₁₄ ester and C₈ ester)

i. Polynuclear Aromatic Hydrocarbon (PAH) Content. The PAH mass ratio shall not exceed 1×10^{-5} . Monitoring shall be once per year on each fluid blend using EPA Method 1654A (or the most current version), in conjunction with the following equation:

$$\text{PAH mass ratio} = \frac{\text{mass (g) of PAH (as phenanthrene)}}{\text{mass (g) of stock base fluid}}$$

The PAH ratio shall be reported on the DMR.

ii. Sediment Toxicity Ratio. The sediment toxicity ratio shall not exceed 1.0, and shall be calculated as follows:

$$\text{Sediment Toxicity Ratio} = \frac{10\text{-day LC}_{50} \text{ of C}_{16}\text{-C}_{18} \text{ internal olefin}}{10\text{-day LC}_{50} \text{ of stock base fluid}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend using the 10-day LC₅₀ sediment toxicity test specified in ASTM E1367-92 (or the most current EPA approved method), and reported on the DMR.

iii. Biodegradation Rate. The biodegradation rate ratio of the stock base fluid shall not exceed 1.0, and shall be calculated using the following equation:

$$\text{Biodegradation Rate ratio} = \frac{\text{Cumulative gas production (ml) of C}_{16}\text{-C}_{18} \text{ internal olefin at 275 days}}{\text{Cumulative gas production of (ml) of stock base fluid at 275 days}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend using International Standards Organization (ISO) Method 11734:1995 (or the most current EPA approved method) and results reported on the DMR.

iv. Mercury and Cadmium in Stock Barite. There shall be no discharge of drilling fluids to which barite has been added, if such barite contains mercury in excess of 1.0 mg/kg (dry weight) or cadmium in excess of 3.0 mg/kg (dry weight). The permittee shall analyze a representative sample of each supply of stock barite prior to drilling each well and submit the results for total mercury and total cadmium on the DMR. If more than one well is being drilled at a site, new analyses are not required for subsequent wells, provided that no new supplies of barite have been received since the previous analysis. In this case, the results of the previous analysis should be used for completion of the DMR. Alternatively, the permittee may provide certification, as documented by the supplier(s), that the barite

being used on the well will meet the above limits. The concentration of the mercury and cadmium in the barite shall be reported on the DMR as documented by the supplier. Analyses shall be conducted by EPA Solid Waste 846 methods 7471A for mercury and 6010B for cadmium and the results expressed in mg/kg (dry weight).

e. Monitoring Only Requirements

Volume. The monthly total discharge of drill cuttings must be estimated. The estimated volume of cuttings discharged (bbl/month) shall be reported on the monthly DMR.

3. Produced Water

a. Prohibitions

- i. No Discharge Near Areas of Biological Concern. Unless otherwise authorized by the Director, there shall be no discharge of produced water from those facilities within 1000 meters of an area of biological concern.
- ii. No Discharge Near Federally Designated Material Ocean Disposal Sites. Unless otherwise authorized by the Director, there shall be no discharge of any drilling fluids, drill cuttings or wastewaters from those facilities within 1000 meters of a Federally Designated Material Ocean Disposal Site. See 40 C.F.R. § 128.15(f) for a list of sites in the general permitting area.

b. Limitations

- i. Oil and Grease. Produced water discharges shall not exceed both a daily maximum limitation of 42.0 mg/l and a monthly average limitation of 29.0 mg/l for oil and grease. A grab sample must be taken at least once per month. The daily maximum samples may be based on the average concentration of four grab samples taken within the 24-hour period. If only one sample is taken for any one month, it must meet both the daily and monthly limits. If more samples are taken, they may exceed the monthly average for any one day, provided that the average of all samples taken meets the monthly limitation. The gravimetric method is specified in 40 C.F.R. Part 136. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. The highest daily maximum concentration and the monthly average concentration shall be reported on the monthly DMR.
- ii. Toxicity. Produced water discharges must meet the limiting permissible concentration (LPC) at the edge of a 100-meter mixing zone. The LPC is defined as 0.1 times the concentration lethal to 50% of organisms (LC_{50}). The LPC must be equal to, or greater than, the predicted effluent concentration at the edge of a 100-meter mixing zone. Predicted effluent concentrations, referred to as critical dilutions, are presented in Tables 3 and 4 of Appendix B for a range of discharge rates and pipe diameters. The critical dilution shall be determined using Tables 3 and 4 of Appendix B of this permit based on the discharge rate most recently reported on the DMR, discharge pipe diameter, and water depth between the discharge pipe and the bottom. Facilities which have not previously reported produced water flow on the DMR shall use the highest monthly average flow measured during the previous 12 months for determining the critical dilution from Tables 3 and 4 of Appendix B this permit. The LC_{50} shall be calculated by conducting 96-hour acute toxicity tests every two months using *Mysidopsis bahia* (*Americamysis bahia* (Mysid shrimp)) and *Menidia beryllina* (Inland silverside minnow).

Facilities that pass six consecutive bimonthly produced water toxicity tests during a 12-month period will be allowed to reduce to a sampling frequency of once every six months; otherwise, bimonthly testing will continue. Permittees that were covered under the previous general permit and that are currently performing toxicity tests every six months, may continue with this frequency under this permit. If at any time, a test result indicates a failed test, the permittee must resume testing at a greater frequency until such time that the facility passes six consecutive tests. Compliance with the toxicity limitation shall be demonstrated by conducting 96-hour acute toxicity tests using the method published in *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA/821-R-02-012), or the most current edition. The results for both species shall be reported on the monthly DMR. The operator shall also submit a copy of all laboratory reports with the DMR. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters.

Exception - Permittees wishing to increase mixing may use a horizontal diffuser, add seawater, or may install multiple discharge ports (e.g., vertical diffuser). Permittees using a horizontal diffuser or multiple discharge ports shall install the system such that the 96-hour LC_{50} is equal to, or greater than, 10 times the critical dilution ($LC_{50} \geq 10 \times$ critical dilution). The projected percent effluent (critical dilution) at the edge of the mixing zone will be calculated using CORMIX2 (for horizontal diffusers) and CORMIX1 (for vertical diffusers), with the following input conditions:

Density Gradient = $0.163 \text{ kg/m}^3/\text{m}$

Ambient seawater density at diffuser depth (or at surface for vertical diffuser) = 1023.0 kg/m^3

Produced water density = 1070.2 kg/m^3

Current speed = 5 cm/sec ($<200 \text{ m}$); 15 cm/sec ($>200 \text{ m}$)

Permittees shall submit a certification that the diffuser, seawater addition, or multiple discharge ports has been installed and state the critical dilution and corresponding LC_{50} in the certification. The certification shall be submitted along with the first DMR for produced water discharges to: Director, Water Management Division, U.S. EPA-Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, SW, Atlanta, GA 30303-8960. All modeling runs shall be retained by the permittee as part of its NPDES records.

Permittees discharging produced water at a rate greater than the flows and pipe diameters covered in Tables 3 and 4 of Appendix B shall determine the critical dilution using the appropriate CORMIX model with the above input parameters. Permittees shall retain the model runs as part of the NPDES records.

Permittees using vertically aligned multiple discharge ports/vertical diffuser shall provide vertical separation between ports which is consistent with Table 5 of Appendix B of this permit. When multiple discharge ports are installed, the depth difference between the discharge port closest to the seafloor and the seafloor shall be the depth difference used to determine the critical dilution from Tables 3 and 4 of Appendix B of this permit. The critical dilution value shall be based on the port flow rate (total flow rate divided by the number of discharge ports) and based on the diameter of the discharge port (or smallest discharge port if they are of different styles).

When seawater is added to produced water prior to discharge, the total produced water flow, including the added seawater, shall be used in determining the critical dilution from Table 6 of Appendix B. When freshwater is added to produced water prior to discharge, the total produced water flow, including the added freshwater, shall be used in determining the critical dilution from Table 7 of Appendix B.

Permittees wishing to reduce a produced water flow rate and thereby the critical dilution through operational changes must provide to EPA a description of the specific changes that were made and the resultant low rate. The permittee must certify that his flow rate will not be exceeded for the remainder of the DMR period, unless the permittee re-certifies.

b. Monitoring Requirements

Flow. The monthly total discharge flow (in MGD) shall be estimated and reported on the monthly DMR.

4. Deck Drainage

a. Limitations

Free Oil. No free oil shall be discharged. Monitoring shall be performed on each day of discharge using the visual sheen test method in accordance with the method provided at Part V.A.4. There shall be no discharge of deck drainage that fails the visual sheen test. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. The results of each sheen test must be recorded and the number of observations of a sheen must be reported on each monthly DMR.

b. Monitoring Only Requirements

Volume. The monthly total discharge must be estimated and reported on the monthly DMR in barrels per day.

5. Produced Sand

There shall be no discharge of produced sand. Wastes must be hauled to shore for treatment and disposal.

6. Well Treatment Fluids, Completion Fluids, and Workover Fluids

a. Limitations

i. Free Oil. No free oil shall be discharged. Monitoring shall be performed prior to discharge and on each day of discharge using the static sheen test method in accordance with the method provided at Part V.A.3. There shall be no discharge of well treatment, completion, or workover fluids that fail the static sheen test. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. The results of each sheen test must be recorded and the number of observations of a sheen must be reported on each monthly DMR.

ii. Oil and Grease. Well treatment fluids, completion fluids, and workover fluids discharges must meet both a daily maximum of 42.0 mg/l and a monthly average of 29.0 mg/l limitation for oil and grease. A grab sample must be taken at least once per month when discharging. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. The daily maximum concentration may be based on the average of four grab samples taken within the 24-hour period. If only one sample is taken for any one month, it must meet both the daily and monthly limits. If more samples are taken, they may exceed the monthly average for any one day, provided that the

average of all samples taken meets the monthly limitation. The analytical method is the gravimetric method, as specified in 40 C.F.R. Part 136.

iii. Priority Pollutants. For well treatment fluids, completion fluids, and workover fluids, the discharge of priority pollutants is prohibited except in trace amounts. Information on the specific chemical composition of any additives containing priority pollutants shall be recorded and retained on site for no less than five years.

Note: If materials added downhole as well treatment, completion, or workover fluids contain no priority pollutants, the discharge is assumed not to contain priority pollutants except possibly in trace amounts.

b. Monitoring Requirements

Volume. The monthly total discharge must be estimated and reported on the monthly DMR in barrels per month

7. Sanitary Waste (Facilities Continuously Manned by 10 or More Persons)

a. Prohibitions

Solids. There shall be no discharge of floating solids. Observations must be made once per day, during daylight in the vicinity of sanitary waste outfalls, following either the morning or midday meals and at the time during maximum estimated discharge. The number of days solids are observed shall be recorded.

b. Limitations

Total Residual Chlorine. Discharges of sanitary waste must contain a minimum of 1.0 mg residual chlorine/l and shall be maintained as close to this concentration as possible at all times. A grab sample must be taken once per month and the concentration reported on the monthly DMR. The approved analytical methods are Hach CN-66-DPD or the EPA method specified in 40 C.F.R. Part 136 for Total Residual Chlorine. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters.

Exception - Any facility which properly maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed in compliance with permit limitations for sanitary waste. The MSD shall be tested annually for proper operation and the test results maintained at the facility. The operator shall indicate use of an MSD on the monthly DMR.

c. Monitoring Only Requirements

Flow. The average flow (MGD) must be estimated each month and recorded on the monthly DMR

8. Sanitary Waste (Facilities Continuously Manned by 9 or Fewer Persons or Intermittently by Any Number)

Prohibition. There shall be no discharge of floating solids. An observation must be made once per day when the facility is manned, during daylight in the vicinity of sanitary waste outfalls, following either the morning or midday meal and at a time during maximum estimated discharge. The number of days solids are observed shall be recorded.

Exception - Any facility which properly maintains an MSD that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed in compliance with permit limitations for sanitary waste. The MSD shall be tested annually for proper operation and the test results maintained at the facility. The operator shall indicate use of an MSD on the monthly DMR.

9. Domestic Waste

a. Prohibitions

Solids. There shall be no discharge of floating solids. In addition, food waste, comminuted or not, may not be discharged within 12 nautical miles from nearest land.

b. Limitations

Solids. Comminuted food waste which can pass through a 25-mm mesh screen (approximately 1 inch) may be discharged 12 or more nautical miles from nearest land.

c. Monitoring Only Requirements

Solids. An observation must be made during daylight in the vicinity of domestic waste outfalls following either the morning or midday meal and at a time during maximum estimated discharge. The number of days solids are observed must be recorded and reported on the monthly DMR.

10. Miscellaneous Discharges (Desalination Unit Discharge, Blowout Preventer Fluid, Uncontaminated Ballast Water, Uncontaminated Bilge Water, Mud, Cuttings, and Cement at the Seafloor, Uncontaminated Seawater, Boiler Blowdown, Source Water and Sand, and Diatomaceous Earth Filter Media)

The following miscellaneous discharges are authorized for discharge: Desalination Unit Discharge; Blowout Preventer Fluid; Uncontaminated Ballast Water; Uncontaminated Bilge Water; Mud, Cuttings, and Cement at the Seafloor; Uncontaminated Seawater; Boiler Blowdown; Source Water and Sand; Diatomaceous Earth Filter Media; Subsea Wellhead Preservation Fluids; Subsea Production Control Fluids; Umbilical steel tube storage fluid; Leak tracer fluid and Riser Tensioner Fluid. Additional miscellaneous discharges associated with subsea operations may be discharged based on the requirements set forth in Part I.C.6 of this permit.

a. Limitations

Free Oil. There shall be no discharge of free oil. Monitoring shall be performed using the visual sheen test method once per day when discharging on the surface of the receiving water or by use of the static sheen method at the operator's option. Both tests shall be conducted in accordance with the methods contained in Part V.A.3 and V.A.4. Discharge is limited to those times that a visual sheen observation is possible. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. The number of days a sheen is observed must be recorded and reported on the monthly DMR.

Exception - Miscellaneous discharges may be discharged from platforms that are on automatic purge systems without monitoring for free oil when the facility is not manned. Discharge is not restricted to periods when observation is possible; however, the static sheen test method must be used during periods when observation of a sheen is not possible, such as a night or during inclement conditions. Static sheen testing is not required for miscellaneous discharges occurring at the sea floor.

11. Miscellaneous Discharges of Freshwater and Seawater Which Have Been Chemically Treated

a. Limitations

Free Oil. There shall be no discharge of free oil. Monitoring shall be performed using the visual sheen test method once per day when discharging on the surface of the receiving water or by use of the static sheen method at the operator's option. Both tests shall be conducted in accordance with the methods contained in Part V.A.3 and V.A.4. Samples must be taken at the nearest accessible location prior to discharge, or prior to combining with any other wastewaters. Discharge is limited to those times that a visual sheen

observation is possible. The number of days a sheen is observed must be recorded.

Exception - Miscellaneous discharges may be discharged from platforms that are on automatic purge systems without monitoring for free oil when the facility is not manned. Discharge is not restricted to periods when observation is possible; however, the static sheen test method must be used during periods when observation of a sheen is not possible, such as a night or during inclement conditions. Static sheen testing is not required for miscellaneous discharges occurring at the sea floor.

b. Treatment Chemicals. The concentration of treatment chemicals in discharged chemically treated freshwater and seawater shall not exceed the most stringent of the following three constraints:

- i. the maximum concentrations and any other conditions specified in the EPA product registration labeling if the chemical is an EPA registered product,
- ii. the maximum manufacturer's recommended concentration, or
- iii. 500 mg/l.

c. Toxicity. The toxicity of discharged chemically treated freshwater or seawater shall be limited as follows:

The 48-hour minimum and monthly average minimum No Observable Effect Concentration (NOEC), or if specified the 7-day average minimum and monthly average minimum NOEC, must be equal to or greater than, the critical dilution concentration specified in this permit in Tables 4.A for seawater discharges and 4.B for freshwater discharges. Critical dilution shall be determined using either Table 4.A or 4.B of this permit in conjunction with (1) the discharge rate, (2) discharge pipe diameter, and (3) the water depth between the discharge pipe and bottom. The monthly average minimum NOEC value is defined as the arithmetic average of all 48-hour average NOEC (or 7-day average minimum NOEC) values determined during the month. Compliance with the toxicity limitation shall be demonstrated by conducting 48-hour acute toxicity tests using *Mysidopsis bahia* (*Americamysis bahia* (Mysid shrimp)) and *Menidia beryllina* (Inland silverside minnow). The test method is published in *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA/821-R-02-012), or the most current edition. The results for both species shall be reported on the monthly DMR within in two months of the discharge. The operator shall also submit a copy of all laboratory reports with the DMR.

d. Monitoring Only Requirements for discharges chemically treated freshwater and seawater.

- i. Flow. The average flow (MGD) must be estimated each month and recorded on the monthly DMR.
- ii. Toxicity. The required frequency of testing for continuous discharges shall be determined as follows:

<u>Discharge Rate</u>	<u>Toxicity Testing Frequency</u>
0 - 499 bbl/day	once per year
500 - 4,599 bbl/day	once per quarter
Greater than 4,599 bb/day	once per month

Intermittent or batch discharges shall be monitored once per discharge but are required to be monitored no more frequently than the corresponding frequencies specified above for continuous discharges.

Samples shall be collected after addition of any substances, including seawater that is added prior to discharge and before the flow is split from multiple discharge ports. Samples also shall be representative of the discharge. Methods to increase dilution also apply to seawater and freshwater discharges which have been chemically treated previously described for produced water in Part I.B.3.

If the permittee has been compliant with this toxicity limit for one 12-month consecutive period for a continuous discharge of chemically treated seawater or freshwater, the required testing frequency shall be reduced to once per year for that discharge. If at any time the toxicity tests results indicate a failure, the permittee must resume more frequent toxicity testing intervals, to be specified by the Director.

C. Other Discharge Limitations

1. Floating Solids or Visible Foam

There shall be no discharge of floating solids or visible foam from any source other than in trace amounts.

2. Halogenated Phenol Compounds

There shall be no discharge of halogenated phenol compounds as a part of any waste streams authorized in this permit.

3. Dispersants, Surfactants, and Detergents

The facility operator shall minimize the discharge of dispersants, surfactants, and detergents except as necessary to comply with the safety requirements of the Occupational Safety and Health Administration and MMS. This restriction applies to tank cleaning and other operations which do not directly involve the safety of workers. (The restriction is imposed because detergents disperse and emulsify oil, potentially increasing toxic impacts and making the detection of a discharge of free oil more difficult.)

4. Rubbish, Trash, and Other Refuse

There shall be no discharge of any solid material not authorized in the permit (as described above).

This permit includes limitations set forth by the U.S. Coast Guard in regulations implementing Annex V of MARPOL 73/78 for domestic waste disposal from all fixed or floating offshore platforms and associated vessels engaged in exploration or exploitation of seabed mineral resources (33 C.F.R. 151). These limitations, as specified by Congress (33 U.S.C. 1901, the Act to Prevent Pollution from Ships), apply to all navigable waters of the United States.

This permit prohibits the discharge of "garbage" including food wastes, within 12 nautical miles from nearest land. Comminuted food waste (able to pass through a screen with a mesh size no larger than 25 mm, approx. 1 inch) may be discharged when 12 nautical miles or more from land. Graywater, drainage from dishwater, shower, laundry, bath, and washbasins are not considered garbage within the meaning of Annex V. Incineration ash and non-plastic clinkers that can pass through a 25-mm mesh screen may be discharged beyond three miles from nearest land. Otherwise, ash and non-plastic clinkers may be discharged beyond 12 nautical miles from nearest land.

5. Areas of Biological Concern

Unless otherwise authorized by the Director, there shall be no discharge of drilling muds, drill cuttings and produced water within 1000 meters of areas of biological concern.

6. Toxic Compounds (Including Compounds Used In Subsea Operations)

The permittee shall notify the Director in writing at least 14 days prior to planned use and discharge of any chemical, other than chlorine or other product previously reported to the Director that is to be used in subsea operations. Such notification shall include:

- a. Name and general composition of the chemical,

- b. Frequencies of use,
- c. Quantities to be used,
- d. Proposed discharge concentrations,
- e. Any acute and chronic toxicity data (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms*, or the most current edition.

Discharge of materials subject to this part is prohibited prior to EPA approval.

7. Dual Gradient Drilling Discharges

Operators performing dual gradient drilling operations may require seafloor discharges of large cuttings (greater than 1/4") to ensure the proper operation of subsea pumps (e.g., electrical submersible pumps). Operators performing dual gradient drilling operations which lead to seafloor discharges of large cuttings for the proper operation of subsea pumps shall either:

- a. measure the mass percent NAFs retained on cuttings value [% Base Fluid (BF)] and mass NAF-cuttings discharge fraction (X) for seafloor discharges each time a set of retorts is performed,
- b. use the following set of default values, (%BF=14%; X=0.15) or,
- c. use a combination for %BF and measure (X).

Additionally, operators performing dual gradient drilling operations which lead to seafloor discharges of large cuttings for the proper operation of subsea pumps shall also perform the following tasks:

- a. use side scan sonar of shallow seismic to determine the presence of high density chemosynthetic communities. Chemosynthetic communities are assemblages of tube worms, clams, mussels, and bacterial mats that occur at natural hydrocarbon seeps or vents, generally in water depths of 500 meters or deeper. Seafloor discharges of large cuttings for the proper operation of subsea pumps shall not be permitted within 1000 feet of a high density chemosynthetic community;
- b. seafloor discharges of large cuttings for the proper operation of subsea pumps shall be visually monitored and documented by a Remotely Operated Vehicle (ROV) within the tether limit (approximately 300 feet). The visual monitoring shall be conducted prior to each time the discharge point is relocated (cuttings discharge hose) and conducted along the same direction as the discharge hose position. Near-seabed currents shall be obtained at the time of the visual monitoring and;
- c. seafloor discharges of large cuttings for the proper operation of subsea pumps shall be directed within a 150 foot radius of the wellbore.

8. No Discharge Near Federally Designated Material Ocean Disposal Sites

Unless otherwise authorized by the Director, there shall be no discharge of any drilling fluids, drill cuttings or wastewaters from those facilities within 1000 meters of a Federally Designated Material Ocean Disposal Site. See 40 C.F.R. § 128.15(f) for a list of sites in the general permitting area.

D. Special Conditions

1. De minimus discharges

De minimus discharges of non-aqueous based drilling fluids not associated with cuttings shall be contained to the extent practicable to prevent damage. Allowable de minimus discharges can include wind blown drilling fluids from the pipe rack and minor drips and splatters around mud handling and solids control equipment. Such de minimus discharges are not likely to be measurable and are not considered in the base fluids retained on cuttings limit.

2. Small Volume Discharges

Small volume drilling fluid discharges which are associated with cuttings, and for which discharge is authorized, include; displaced interfaces, accumulated solids in sand traps, pit clean-out solids, and centrifuge discharges made while changing mud weight. To determine the percent drilling fluids retained on cuttings for those discharges, the permittee may either monitor the discharge using the retort test method, or use a default value of 25% to determine compliance with the limitation.

3. Seabed Surveys

Operators who discharge drill cuttings which are generated using non-aqueous based drilling fluids shall conduct seabed surveys at each location where such a discharge occurs. Results of the seafloor surveys shall be submitted to EPA- Region 4 with the discharge monitoring report no later than two years after completion of the drilling operations at the site.

At a minimum, the survey must include: the area and thickness of drill cuttings depositions on the seafloor, analysis of the toxicity of the cuttings depositions on the seafloor, analysis of contaminants present in the deposited cuttings, and analysis of the benthic populations present at the site of cuttings deposition. Monitoring shall be conducted twice at each site where drill cuttings generated using non-aqueous based drilling fluids are discharged. The first survey is required to commence within two weeks after completion of drilling operations. A second survey shall be accomplished one year after commencement of the first survey. In addition, both surveys shall be accompanied by sampling of the seafloor benthic populations and analysis for contaminant at a site which is located near the discharge, but sufficiently far as to be unaffected by the discharged drill cuttings or any drilling fluids retained on the cuttings.

Operators shall also monitor the discharge of drill cuttings while drilling is conducted. This monitoring will include: the dates discharge takes place, the prevailing current during discharge, the volumes and types of drilling fluids retained on cuttings and discharged, the volume of cuttings discharged, and a chemical analysis of drilling fluids used at the facility.

Alternatively, operators required to conduct seafloor surveys under this permit may submit a plan for an equivalent industry-wide seafloor monitoring study to EPA Region 4 for approval. The alternative industry-wide study shall be designed to provide information on discharges of cuttings generated using non-aqueous based drilling fluids at a minimum of eight locations where the discharge occurs. At least three of those discharge locations must be in deep water (greater than 1000 feet). Monitoring shall include the areal extent and thickness of cuttings deposition, the sediment chemistry and mineralogy, and the extent of anoxic effects resulting from cuttings discharges. Sampling conducted in shallow areas shall include extensive biological sampling intended to measure community structural changes relative to cuttings discharges as well as the physical and chemical monitoring performed in deep water. Detailed information regarding the volume and types of drilling fluids and the cuttings discharged shall also be recorded and reported with the results of such a study. If Region 4 approves the equivalent seafloor monitoring study, monitoring conducted under the study shall constitute compliance with the seafloor survey requirements of this permit for those operators who participate. Participants in the current Gulf of Mexico Seabed Survey will be given consideration for meeting this requirement, as opposed to initiating a new study.

4. Reference C₁₆-C₁₈ Internal Olefin Drilling Fluid Formulation

The reference C₁₆-C₁₈ internal olefin drilling fluids used to determine the drilling fluid sediment toxicity ratio and compliance with the BAT sediment toxicity discharge limitation shall be formulated to meet the specifications in Table 1 of Appendix 8 of 40 C.F.R. Part 435, subpart A.

5. Cooling Water Intake Structure Study

Operators who have cooling water intake structures shall conduct a study to determine technologies or operating procedures to reduce the adverse environmental impact of these structures on aquatic life. Results of the survey shall be submitted to EPA- Region 4 with the discharge monitoring report no later than three years after the effective date of this permit

At a minimum, the study must investigate the impact of reducing impingement and entrainment of aquatic organisms by reducing intake flow.

Alternatively, operators required to conduct a cooling water intake structure study under this permit may submit a plan for an equivalent industry-wide study to EPA Region 4 for approval no later than two years from the effective date of this permit.

Part II. Standard Conditions for NPDES Permits

A. General Conditions

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

[40 CFR §§ 122.41(a) and 122.41(a)(1)]

2. Penalties for Violations of Permit Conditions

The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued

under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

[40 CFR § 122.41(a)(2)]

Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

[40 CFR § 122.41(a)(3)]

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" Section B, Paragraph 3, and "Upset" Section B, Paragraph 4, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

[40 CFR § 122.41(d)]

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[40 CFR § 122.41(f)]

6. Toxic Pollutants

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

[40 CFR § 122.44(b)(1)]

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Effect of a Permit

Except for any toxic effluent standards and prohibitions imposed under section 307 of the CWA and “standards for sewage sludge use or disposal” under 405(d) of the CWA, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with sections 301, 302, 306, 307, 318, 403, and 405 (a)-(b) of CWA. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in 40 CFR Sections 122.62 and 122.64.

Compliance with a permit condition which implements a particular “standard for sewage sludge use or disposal” shall be an affirmative defense in any enforcement action brought for a violation of that “standard for sewage sludge use or disposal” pursuant to sections 405(e) and 309 of the CWA.

[40 CFR § 122.5(a)]

10. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

[40 CFR § 122.5(b) & 40 CFR § 122.41(g)]

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulation.

[40 CFR § 122.5(c)]

11. Onshore or Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any waters of the United States.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[40 CFR § 124.16 paraphrased]

13. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

[40 CFR § 122.41(h)]

B. Operation and Maintenance of Pollution Controls

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a

permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

[40 CFR § 122.41(e)]

2. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[40 CFR § 122.41(c)]

3. Bypass of Treatment Facilities

a. Definitions

- (i) “**Bypass**” means the intentional diversion of waste streams from any portion of a treatment facility.
- (ii) “**Severe property damage**” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations.

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c.) and (d.) of this section.

c. Notice

- (i) **Anticipated bypass.** If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (ii) **Unanticipated bypass.** The permittee shall submit notice of an unanticipated bypass as required in Section D, Paragraph 8 (24-hour notice).

d. Prohibition of bypass

- (i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (3) The permittee submitted notices as required under paragraph (c) of this section.
- (ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (m)(4)(i) of this section.

[40 CFR § 122.41(m)(1)-(4)]

4. Upsets

a. Definition

“**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
- (ii) The permitted facility was at the time being properly operated; and
- (iii) The permittee submitted notice of the upset as required in Section D, Paragraph 8 (24 hour notice);
- (iv) The permittee complied with any remedial measures required under paragraph (d) of this section.

d. Burden of proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

[40 CFR § 122.41(n)(1)-(4)]

5. Removed Substances

This permit does not authorize discharge of solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters of the United States unless specifically limited in Part I.

C. Monitoring Records

1. Representative Sampling

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

[40 CFR § 122.41(j)(1)]

All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than $\pm 10\%$ from the true discharge rates throughout the range of expected discharge volumes. Once-through condenser cooling water flow which is

monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacturer's pump curves shall not be subject to this requirement. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references. These references are available in from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. (800) 553-6847 or (703) 487-4650.

"A Guide to Methods and Standards for the Measurement of Water Flow", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 100 pp. (Order by NTIS No. COM-7510683.)

"Water Measurement Manual", U.S. Department of Interior, Bureau of Reclamation, Revised Edition, 1984, 343 pp. (Order by NTIS No. PB-85221109.)

"Flow Measurement in Open Channels and Closed Conduits", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Order by NTIS No. PB-273535.)

"NPDES Compliance Flow Measurement Manual", U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 149 pp. (Order by NTIS No. PB-82131178.)

3. Monitoring Procedures

Monitoring results must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, unless other test procedures have been specified in the permit.

[40 CFR § 122.41(j)(4)]

4. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

[40 CFR § 122.41(j)(5)]

5. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

[40 CFR § 122.41(j)(2)]

6. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;

- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

[40 CFR § 122.41(j)(3)(i)-(vi)]

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

[40 CFR § 122.41(i)(1)-(4)]

D. Reporting Requirements

1. Change in Discharge

Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in § 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D, Paragraph 10.
- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

[40 CFR § 122.41(l)(1)(i)-(iii)]

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

[40 CFR § 122.41(l)(2)]

Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Director.

3. Transfer of Ownership of Control

- a. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

[40 CFR § 122.41(l)(3)]

- b. Automatic transfers. As an alternative to transfers under paragraph (a) of this section, any NPDES permit may be automatically transferred to a new permittee if:

- (i) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in paragraph (b)(2) of this section;
- (ii) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- (iii) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under Sec. 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (b)(2) of this section.

[40 CFR § 122.61(b)]

4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit. See Part III of the permit.

[40 CFR § 122.41(l)(4)]

Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

[40 CFR § 122.41(l)(4)(i)]

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

[40 CFR § 122.41(l)(4)(ii)]

6. Averaging of Measurements

Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

[40 CFR § 122.41(l)(4)(iii)]

7. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

[40 CFR § 122.41(l)(5)]

Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

8. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours under this paragraph.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See § 122.41(g).)
- b. Any upset which exceeds any effluent limitation in the permit.
- c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See § 122.44(g).)

The Director may waive the written report on a case-by-case basis for reports under this section's paragraph if the oral report has been received within 24 hours.

[40 CFR § 122.41(l)(6)]

9. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Section D at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D-8.

[40 CFR § 122.41(l)(7)]

10. Changes in Discharge of Toxic Substances

The following conditions apply to all NPDES permits within the categories specified below:

- a. *Existing manufacturing, commercial, mining, and silvicultural dischargers.* All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - (i) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or

[40 CFR § 122.42(a)(1)(i-iii)]

- (ii) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with § 122.21(g)(7).

[40 CFR § 122.42(a)(2)(i-iii)]

- b. *Publicly owned treatment works.* All POTWs must provide adequate notice to the Director of the following:
 - (i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and
 - (ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - (iii) For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quality and quantity of effluent introduced into the POTW, and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

[40 CFR § 122.42(b)]

11. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

[40 CFR § 122.41(b)]

The application should be submitted at least 180 days before the expiration date of this permit. The Regional Administrator may grant permission to submit an application later than the 180 days in advance, but no later than the permit expiration date.

[40 CFR § 122.21(d) paraphrased]

When EPA is the permit-issuing authority, the conditions of an expired permit continue in force until the effective date of a new permit if the permittee has submitted a timely application which is a complete application for a new permit; and the Regional Administrator, through no fault of the permittee does not issue a new permit with an effective date on or before the expiration date of the previous permit.

[40 CFR § 122.6(a) paraphrased]

Permits continued under this section remain fully effective and enforceable.

[40 CFR § 122.6(b)]

12. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified.

[40 CFR § 122.41(k)(1)]

- a. *Applications.* All permit applications shall be signed as follows:

- (i) *For a corporation.* By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - (1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
 - (2) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in § 122.22(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under § 122.22(a)(1)(ii) rather than to specific individuals.

- (ii) *For a partnership or sole proprietorship.* By a general partner or the proprietor, respectively; or
 - (iii) *For a municipality, State, Federal, or other public agency.* By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - (1) The chief executive officer of the agency, or
 - (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
- b. All reports required by permits, and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (i) The authorization is made in writing by a person described in paragraph a. of this section;
 - (ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
 - (iii) The written authorization is submitted to the Director.
- c. *Changes to authorization.* If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has

responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

- d. *Certification.* Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

[40 CFR § 122.22]

13. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Permit Issuing Authority. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

[40 CFR §§ 124.18 & 122.7 paraphrased]

14. Penalties for Falsification of Reports

The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

[40 CFR § 122.41(k)(2)]

E. Definitions

1. Permit Issuing Authority

The Regional Administrator of EPA Region 4 or his/her designee, unless at some time in the future the State or Indian Tribe receives authority to administer the NPDES program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving the authorization becomes the issuing authority.

The use of the term "**Director**" in this permit shall apply to the Regional Administrator of EPA, Region 4.

2. Act

"**Act**" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) Public Law 92-500, as amended by Public Law 95-217 and Public Law 95-576, 33 U.S.C. 1251 et seq.

[40 CFR § 124.2]

3. Mass/Day Measurements

- a. The "**average monthly discharge**" is defined as the total mass of all daily discharges sampled and/or measured during a calendar month on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such month. It is therefore, an arithmetic mean determined by adding the weights of the pollutant found each day of the month and then dividing this sum by the

number of days the tests were reported. This limitation is identified as “**Daily Average**” or “**Monthly Average**” in Part I of the permit and the average monthly discharge value is reported in the “Average” column under “Quantity or Loading” on the Discharge Monitoring Report (DMR).

- b. The “**average weekly discharge**” is defined as the total mass of all daily discharges sampled and/or measured during the calendar week on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such week. It is, therefore, an arithmetic mean determined by adding the weights of pollutants found each day of the week and then dividing this sum by the number of days the tests were reported. This limitation is identified as “Weekly Average” in Part I of the permit and the average weekly discharge value is reported in the “Maximum” column under “Quantity or Loading” on the DMR.
 - c. The “**maximum daily discharge**” is the total mass (weight) of a pollutant discharged during a calendar day. If only one sample is taken during any calendar day the weight of pollutant calculated from it is the “maximum daily discharge”. This limitation is identified as “Daily Maximum”, in Part I of the permit and the highest such value recorded during the reporting period is reported in the “Maximum” column under “Quantity or Loading” on the DMR.
 - d. The “**average annual discharge**” is a rolling average equal to the arithmetic mean of the mass measured in all discharges sampled and/or measured during consecutive reporting periods which comprise one year. For parameters that are measured at least once per month, the annual average shall be computed at the end of each month and is equal to the arithmetic mean of the monthly average of the month being reported and each of the previous eleven months. This limitation is defined as “Annual Average” in Part I of the permit and the average annual discharge value is reported in the “Average” column under “Quantity or Loading” on the DMR.
4. Concentration Measurements
- a. The “**average monthly concentration**”, other than for bacterial indicators, is the sum of the concentrations of all daily discharges sampled and/or measured during a calendar month on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such month (arithmetic mean of the daily concentration values). The daily concentration value is equal to the concentration of a composite sample or in the case of grab samples is the arithmetic mean (weighted by flow value) of all the samples collected during that calendar day. This limitation is identified as “Monthly Average” or “Daily Average” under “Other Limits” in Part I of the permit and the average monthly concentration value is reported under the “Average” column under “Quality or Concentration” on the DMR.
 - b. The “**average weekly concentration**”, other than for bacterial indicators, is the sum of the concentrations of all daily discharges sampled and/or measured during a calendar week on which daily discharges are sampled and measured divided by the number of daily discharges sampled and/or measured during such week (arithmetic mean of the daily concentration values). The daily concentration value is equal to the concentration of a composite sample or in the the case of grab samples is the arithmetic mean

(weighted by flow value) of all the samples collected during that calendar day. This limitation is identified as "Weekly Average" under "Other Limits" in Part I of the permit and the average weekly concentration value is reported under the "Maximum" column under "Quality or Concentration" on the DMR.

- c. The "**maximum daily concentration**" is the concentration of a pollutant discharged during a calendar day. It is identified as "Daily Maximum" under "Other Units" in Part I of the permit and the highest such value recorded during the reporting period is reported in the "Maximum" column under "Quality or Concentration" on the DMR.
- d. The "**average annual concentration**", other than for bacterial indicators, is a rolling average equal to the arithmetic mean of the effluent or influent samples collected during consecutive reporting periods which comprise one year. For parameters that are measured at least once per month, the annual average shall be computed at the end of each month and is equal to the arithmetic mean of the monthly average of the month being reported and the monthly average of each of the previous eleven months. This limitation is identified as "Annual Average" under "Other Limits" in Part I of the permit and the average annual concentration value is reported in the "Average" column under "Quality or Concentration" on the DMR.

5. Other Measurements

- a. The effluent flow expressed as million gallons per day (MGD) is the 24-hour average flow averaged over a monthly period. It is the arithmetic mean of the total daily flows recorded during the calendar month. Where monitoring requirements for flow are specified in Part I of the permit, the flow rate values are reported in the "Average" column under "Quantity or Loading" on the DMR.
- b. An "**instantaneous flow measurement**" is a measure of flow taken at the time of sampling, when both the sample and flow are representative of the total discharge.
- c. Where monitoring requirements for pH, dissolved oxygen, or bacterial indicators are specified in Part I of the permit, the values are generally reported in the "Quality or Concentration" column on the DMR.
- d. The "average annual discharge" for bacterial indicators shall be calculated in the same manner as that for mass limitations (see Paragraph II.E.3.d.).

6. Types of Samples

- a. Composite Sample: A "**composite sample**" is a combination of not less than 8 influent or effluent portions, of at least 100 ml, collected over the full time period specified in Part I.A. The composite sample must be flow proportioned by either a time interval between each aliquot or by volume as it relates to effluent flow at the time of sampling or total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.
- b. Grab Sample: A "**grab sample**" is a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.

7. Calculation of Means

- a. Arithmetic Mean: The "arithmetic mean" of any set of values is the sum of the individual values divided by the number of individual values.
- b. Geometric Mean: The "**geometric mean**" of any set of values is the N^{th} root of the product of the individual values where N is equal to the number

of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

- c. Weighted by Flow Value: “**Weighted by flow value**” means the sum of each concentration times its respective flow divided by the sum of the respective flows.

8. Calendar Day

A “**calendar day**” is defined as the period from midnight of one day until midnight of the next day. However, for purposes of this permit, any consecutive 24-hour period that reasonably represents the calendar day may be used for sampling.

9. Hazardous Substance

A “**hazardous substance**” means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

[40 CFR § 122.2]

10. Toxic Pollutants

A “**toxic pollutant**” is any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing section 405(d) of the Clean Water Act.

[40 CFR § 122.2]

Part III. Monitoring Reports and Permit Modification

A. Monitoring Reports

The operator shall be responsible for submitting monitoring results for each facility (e.g., well) within the lease block. If there is more than one type of wastewater for each well, the discharge outfalls shall be designated in the following manner:

- 001 for Water-based Drilling Fluids
- 002 for Water-based Drill Cuttings
- 003 for Synthetic-based Drill Cuttings
- 004 for Produced Water
- 005 for Deck Drainage
- 006 for Well Treatment, Fluids, Completion Fluids, and Workover Fluids
- 007 for Sanitary Discharges
- 008 for Domestic Waste Discharges
- 009 for Miscellaneous Discharges Which Have Not Been Chemically Treated
- 010 for Miscellaneous Discharges Which Have Been Chemically Treated

Monitoring results obtained for each month shall be summarized for that month and reported on a DMR form (EPA No. 3320-1), and shall be postmarked no later than the 28th day of the month following the completed calendar quarter (January 1 to March 31, April 1 to June 30, July 1 to September 30 and October 1 to December 31). For example, data for January 1 through March 31 shall be submitted by April 28). Signed copies of these and all other reports required by Part II.D shall be submitted to the following address:

Director
Water Management Division
U.S. EPA- Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

All laboratory reports submitted with DMRs should clearly indicate the permit number, outfall number(s), and any other identification information necessary to associate the report with the correct facility, waste stream, and outfall(s).

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR form or the operator may include the facility on a "No Activity" list each quarter. If, during the term of this permit, the facility ceases discharge to surface waters, the Regional Director shall be notified immediately upon cessation of discharge. This notification shall be in writing.

B. Permit Modification

This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation, or sludge disposal requirement issued or approved under sections 301(b)(2) (C) and (D), 307(a)(2), and 316(b) of the Act, as amended, if the effluent standard or limitation requirement so issued or approved:

1. Contains different conditions or is otherwise more stringent than any conditions in the permit; or
2. Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

Part IV. Best Management Practices/Pollution Prevention (BMP3) Plan

A. Objective

This part is directed towards developing and implementing best management practices plan that incorporates pollution prevention measures for the entire facility. The plan shall address measures towards reducing those pollutants of concern which discharge (or could discharge) to surface waters, as well as measures to reduce impingement and entrainment of fish, eggs and larvae in the cooling water intake structure, through the use of good engineering and good housekeeping practices. For the purposes of this permit, pollutants of concern shall be limited to toxic pollutants, as defined below under Part IV.C.4, known to the discharger. If applicable, the plan shall address each component or system capable of generating or causing a release of NAF and identify specific preventative or remedial measures to be implemented.

B. General Requirements

In accordance with Section 304(e) and 402(a)(2) of the Clean Water Act (CWA) as amended, 33 U.S.C. §§ 1251 *et seq.*, and consistent with the policy of the Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109, the permittee must develop and implement a Best Management Practices (BMP) plan incorporating pollution prevention measures for the entire offshore facility. Note that this part does not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. If applicable, the plan shall also include measures to prevent, or minimize, the discharge of NAFs from the facility to waters of the United States through normal operations and ancillary activities. Ways to reduce impingement and entrainment of organisms in the cooling water intake structure shall also be evaluated.

A BMP plan developed as a requirement of a previous NPDES permit will satisfy the requirements of this part if it addresses both facility-wide and specific BMPS for NAFs per Appendix 7 of 40 C.F.R. Part 435, subpart A, to reduce the likelihood of spills or other releases of oil or oil contaminated water, chemicals, cleaning chemicals, and biocides that may enter waters of the United States. References which may be used in developing the plan are "Criteria and Standards for Best Management Practices Authorized Under Section 304(e) of the Act", found at 40 C.F.R. 125, Subpart K, the

Waste Minimization Opportunity Assessment Manual, EPA/625/7-88/003, and other EPA documents relating to BMP guidance.

Pollution prevention requirements per MMS (see 30 C.F.R. Part 250.300), or other federal requirements relating to BMP guidance, may be incorporated by reference.

The BMP plan is to be retained on-site. Unless otherwise required by the Director, submittal of the BMP plan to EPA is not required.

C. Part IV Definitions

1. The term "pollutants" refers to conventional, non-conventional and toxic pollutants, as appropriate for the NPDES storm water program and toxic pollutants.
2. Conventional pollutants are: biochemical oxygen demand (BOD), suspended solids, pH, fecal coliform bacteria and oil & grease.
3. Non-conventional pollutants are those which are not defined as conventional or toxic, such as phosphorus, nitrogen or ammonia. (Ref: 40 C.F.R. Part 122, Appendix D, Table IV)
4. For purposes of this part, Toxic pollutants include, but are not limited to: a) any toxic substance listed in Section 307(a)(1) of the CWA, any hazardous substance listed in Section 311 of the CWA, and b) any substance (that is not also a conventional or non-conventional pollutant) for which EPA has published an acute or chronic toxicity criterion, or that is a pesticide regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
5. "Pollution prevention" and "waste minimization" refer to the first two categories of EPA's preferred hazardous waste management strategy: first, source reduction and then, recycling.
6. "Recycle/Reuse" is defined as the minimization of waste generation by recovering and reprocessing usable products that might otherwise become waste; or the reuse or reprocessing of usable waste products in place of the original stock, or for other purposes such as material recovery, material regeneration or energy production.
7. "Source reduction" means any practice which: i) reduces the amount of any pollutant entering a waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and ii) reduces the hazards to public health and the environment associated with the release of such pollutant. The term includes equipment or technology modifications, process or procedure modifications, reformulation or substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to, or previously considered necessary for, the production of a product or the providing of a service.
8. "BMP3" means a Best Management Plan incorporating the requirements of 40 C.F.R. Part 125, Subpart K and Addendum B of Appendix 7 of 40 C.F.R. Part 435, subpart A, plus pollution prevention techniques, except where other existing programs are deemed equivalent by the permittee. The permittee shall certify the equivalency of the other referenced programs.
9. "Waste Minimization Assessment" means a systematic planned procedure with the objective of identifying ways to reduce or eliminate waste.
10. The term "material" refers to chemicals or chemical products used in any plant operation (i.e., caustic soda, hydrazine, degreasing agents, paint solvents, etc.). It does not include lumber, boxes, packing materials, etc.

D. Specific BMP3 Plan Requirements

1. Facility-Wide Operations

The following requirements may be incorporated by reference from existing facility procedures:

- a. name & description of facility, a map illustrating the location of the facility & adjacent receiving waters, and other maps, plot plans or drawings, as necessary;
- b. overall objectives (both short-term and long-term) and scope of the plan, towards reduction of pollutants, anticipated dates of achievement of reduction, and a description of means for achieving each reduction goal;
- c. a description of procedures relative to spill prevention, control & countermeasures and a description of measures employed to prevent storm water contamination, where the storm water can reasonably be expected to reach waters of the U.S. prior to treatment;
- d. a description of practices involving preventive maintenance, housekeeping, recordkeeping, inspections, and plant security;
- e. a description of a waste minimization assessment plan for this facility, to determine actions that could be taken to reduce waste loadings and chemical losses to all wastewater and/or storm water streams, without compromising production efficiency or jeopardizing operations. The plan shall address both short-term and long-term opportunities for minimizing waste generation at this facility, particularly for high volume and/or high toxicity components of wastewater and storm water streams. Initially, the WMA plan should focus primarily on actions that could be implemented quickly, thereby realizing tangible benefits to surface water quality. Long term goals and actions pertaining to waste reduction shall include investigation of the feasibility of eliminating toxic chemical use, instituting process changes, raw material replacements, etc. At minimum, the WMA plan should include the following items:

(i). Material and Risk Assessment - A materials & risk assessment shall be developed and shall include the following:

- (1). identification of the types & quantities of materials used at the facility;
- (2). identification of the location & types of materials management activities which occur at the facility;
- (3). an evaluation of the following aspects of materials compatibility: containment & storage practices for chemicals, container compatibility, chemical mixing procedures; potential mixing or compatibility problems; and specific prohibitions regarding mixing of chemicals;
- (4). technical information on human health and ecological effects of toxic or hazardous chemicals presently used or manufactured (including by-products produced) or planned for future use or production;
- (5). analyses of chemical use & waste generation, including input parameters for all pollutants, overall facility material balances and as necessary, internal process balances, for all pollutants. (When actual measurements of the quantity of a chemical entering a wastewater or storm water stream are not readily available, reasonable estimates should be made based on best engineering judgment.) The analyses should address reasons for using particular chemicals, and/or measures

or estimates of the actual and potential chemical discharges via wastewater, wastewater sludge, storm water, air, solid waste or hazardous waste media.

(ii.) Pollutant Reduction Methods - The WMA plan shall include, at a minimum, the following means of reducing pollutant discharges in wastewater streams or of otherwise minimizing wastes:

- (1). process related source reduction measures, including any or all of the following, as appropriate: improved process controls; reduction in use of toxic or hazardous materials; chemical modifications and/or material purification; chemical substitution employing non-toxic or less toxic alternatives; and equipment upgrades or modifications or changes in equipment use.
- (2). housekeeping/operational changes, including waste stream segregation, inventory control, spill & leak prevention, equipment maintenance; and employee training in areas of pollution prevention, good housekeeping, and spill prevention & response;
- (3). in-process recycling, on-site recycling and/or off-site recycling of materials (such as non-hazardous rags, pads & filters, antifreeze, lube oil, cooking oil, etc);
- (4). following all source reduction & recycling practices, wastewater treatment process changes, including the use of new or improved treatment methods, such that treatment degradation products are less toxic to aquatic or human life; and
- (5). other means as agreed upon by the permit issuing authority and the permittee.

(iii.) Storm Water Evaluation - For storm water discharges and instances where storm water enters the wastewater treatment/disposal system or is otherwise commingled with wastewater, the BMP3 shall evaluate the following potential sources of storm water contamination, at a minimum:

- (1). loading, unloading and transfer areas for dry bulk materials or liquids;
- (2). outdoor storage of raw materials or products;
- (3). outdoor processing activities;
- (4). dust or particulate generating processes;
- (5). on-site waste and/or sludge disposal practices.

The likelihood of storm water contact in these areas and the potential for spills from these areas shall be considered in the evaluation. The history of significant leaks or spills of toxic or hazardous pollutants shall also be considered. Recommendations for changes to current practices which would reduce the potential for storm water contamination from these areas shall be made, as necessary.

Practices which reduce pollutant loading in wastewater or storm water discharges with a consequent increase in solid hazardous waste generation, decrease in air quality, or adverse affect to groundwater shall not be considered waste reduction for the purposes of this assessment planning.

2. Non-Aqueous Drilling Fluids

In accordance with Addendum B of Appendix 7, 40 C.F.R. Part 435, subpart A, operators are not required to use specific BMPs for NAFs if all cuttings are monitored in accordance with Appendix 7 of 40 C.F.R. Part 435, subpart A. (This special exemption

for NAFs cuttings does not excuse the facility from developing and implementing BMPs for other areas/operations at the site.)

The following specific best management practices and pollution prevention activities are required in the BMP3 Plan when operators elect to control NAF discharges associated with cuttings by a set of BMPs:

- a. The operator shall identify and document each NAF well that uses BMPs before starting drilling operations and the anticipated total feet to be drilled with NAF for that particular well.
- b. Each facility component or system controlled through use of BMPs shall be examined for its NAF-waste minimization opportunities and its potential for causing a discharge of NAF to waters of the United States due to natural phenomena (e.g., rain, snowfall).
- c. For each NAF wastestream controlled through BMPs where experience indicates a reasonable potential for equipment failure (e.g., tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances to result in NAF reaching surface waters, the BMP3 plan shall include a prediction of the total quantity of NAF which could be discharged from the facility as a result of each condition or circumstance. Specifically, the BMP3 plan should address how NAF cuttings will be handled during routine preventative maintenance or repairs periods for non-crucial equipment such as mud cleaner and high-speed centrifuge and crucial equipment such as the cuttings dryer and cuttings transport system. See Part II.B.c for NPDES permit requirements regarding “anticipated bypass.”
- d. The operator must establish programs for identifying, documenting, and repairing malfunctioning NAF equipment, tracking NAF equipment repairs, and training personnel to report and evaluate malfunctioning NAF equipment.
- e. The operator must establish operating and maintenance procedures for each component in the solids control system in a manner consistent with the manufacturer’s design criteria.
- f. The operator must use the most applicable spacers, flushers, pills and displacement techniques in order to minimize contamination of drilling fluids when changing from water-based drilling fluids to NAF, and vice versa.
- g. A daily retort analysis shall be performed (in accordance with Appendix 7 to 40 C.F.R. Part 435, subpart A during the first 0.33 X feet drilled with NAF, where X is the anticipated total feet to be drilled with NAF for that particular well. The retort analyses shall be documented in the well retort log. The operators shall use the calculation procedures detailed in Appendix 7 to subpart A of 40 C.F.R. Part 435 (see equations 1 through 8) to determine the arithmetic average ($\%BF_{\text{well}}$) of the retort analyses taken during the first 0.33 X feet drilled with NAF.
- h. When the arithmetic average ($\%BF_{\text{well}}$) of the retort analyses taken during the first 0.33 X feet drilled with NAF is less than or equal to the base fluid retained on cuttings limitation or standard (see 40 C.F.R. § 435.13 and 435.15), retort monitoring of cuttings may cease for that particular well. The same BMPs and drilling fluid used during the first 0.33 X feet shall be used for all remaining NAF sections for that particular well.
- i. When the arithmetic average ($\%BF_{\text{well}}$) of the retort analyses taken during the first 0.33 X feet drilled with NAF is greater than the base fluid retained on cuttings limitation or standard (see 40 C.F.R. § 435.13 and 435.15), retort monitoring shall continue for the next 0.33 X feet drilled with NAF, where X is the anticipated total feet to be drilled with NAF for that particular well. The

retort analyses for the first and second 0.33 X feet shall be documented in the well retort log.

j. When the arithmetic average (% BF_{well}) of the retort analyses taken during the first 0.66 X feet (i.e., retort analyses taken from the first and second X feet) drilled with NAF is less than or equal to the base fluid retained on cuttings limitation or standard (see 40 C.F.R. § 435.13 and 435.15), retort monitoring of cuttings may cease for that particular well. The same BMPs and drilling fluid used during the first 0.66 X feet shall be used for all remaining NAF sections for that particular well.

k. When the arithmetic average (%BF_{well}) of the retort analyses taken during the first 0.66 X feet shall (i.e. retort analyses taken from first and second 0.33 X feet) drilled with NAF is greater than the base fluid retained on cuttings limitation or standard (see 40 C.F.R. § 435.13 and 435.15), retort monitoring shall continue for all remaining sections for that particular well. The retort analyses for all NAF sections shall be documented in the well retort log.

l. When the arithmetic average (%BF_{well}) of the retort analyses taken over all NAF sections for the entire well is greater than the base fluid retained on cuttings limitation or standard (see §§ 435.13 and 435.15), the operator is in violation of the base fluid retained on cuttings limitation or standard and shall submit notification of these monitoring values in accordance with NPDES permit requirements. Additionally, the operator shall, as part of the BMP3 Plan, initiate a re-evaluation and modification to the BMP3 Plan in conjunction with equipment vendors and/or industry specialists.

m. The operator shall include retort monitoring data and dates of retort-monitored and non-retort-monitored NAF-cuttings discharges managed by BMPs in their NPDES permit reports.

n. The operator shall establish mud pit and equipment cleaning methods in such a way as to minimize the potential for building-up drill cuttings (including accumulated solids) in the active mud system and solids control equipment system. These cleaning methods shall include, but are not limited to, the following procedures :

- i. Ensuring proper operation and efficiency of mud pit agitation equipment,
- ii. Using mud gun lines during mixing operations to provide agitation in dead spaces, and
- iii. Pumping drilling fluids off of drill cuttings (including accumulated solids) for use, recycle, or disposal before using wash water to dislodge solids.

3. Cooling Water Intake Structure

The permittee shall provide a narrative description of the cooling water intake structure. This should include information pertaining to the location, design, construction and capacity, such as daily average intake flow velocity, type of screen, type of fish barrier system, type of fish diversion system, percent intake water used for cooling purposes and average intake flow in MGD. The BMP3 plan shall address practices to reduce impingement and entrainment of organisms.

E. Signatory Authority & Management Responsibilities

The BMP3 plan shall contain a written and dated statement (with signatures) from the drilling engineer, OIM (Offshore Installation Manager), and other individual responsible for development and implementation of the BMP3 plan stating that the review has been completed and that the BMP3 plan fulfills the objective and specific requirements set

forth in Parts IV. A and D, above. The statement shall be publicized or made known to all facility employees.

F. Plan Certification

The operator shall certify that its BMP3 plan is complete, on-site, and available upon request to EPA. This certification shall identify the NPDES permit number and be signed by an authorized representative of the operator. This certification shall be kept with the BMP3 plan. The certification shall be made no later than one year from the effective date of coverage under this general permit.

G. Plan Documentation

The BMP3 plan shall be documented in narrative form, and shall include any necessary plot plans, drawings or maps, and shall be developed in accordance with good engineering practices. At a minimum, the BMP3 plan shall contain the planning, development and implementation, and evaluation/reevaluation components. Examples of these components are contained in "Guidance Document for Developing Best Management Practices," EPA document no. 833-B-93-004 (1993).

The permittee shall maintain a copy of the BMP3 plan and related documentation (e.g., training certifications, summary of the monitoring results, records of NAF-equipment spills, repairs, and maintenance) at the facility and shall make the BMP3 plan and related documentation available to EPA upon request.

H. Best Management Practices & Pollution Prevention Committee:

A Best Management Practices Committee (Committee) should be established to direct or assist in the implementation of the BMP3 plan. The Committee should be comprised of individuals within the plant organization who are responsible for developing, implementing, monitoring of success, and revision of the BMP3 plan. The activities and responsibilities of the Committee should address all aspects of the facility's BMP3 plan. The scope of responsibilities of the Committee should be described in the plan.

I. Employee Training

Employee training programs shall inform appropriate personnel of the components and goals of the BMP3 plan and shall describe employee responsibilities for implementing the plan. Training shall address topics such as good housekeeping, materials management, recordkeeping & reporting, spill prevention & response, as well as specific waste reduction practices to be employed. The plan shall identify periodic dates for such training.

J. Plan Development & Implementation

The BMP3 plan shall be developed and implemented within one year after the effective date of this coverage under this general permit, unless any later dates are specified by the Director.

K. Plan Review

The plan shall be reviewed by the permittee's drilling engineer and OIM to ensure compliance with the BMP3 plan purpose and objectives set forth above.

If following review by EPA, the BMP3 plan is determined insufficient, EPA may notify the permittee that the BMP3 plan does not meet one or more of the minimum requirements of this Part. Upon such notification from the Director, or authorized representative, the permittee shall amend the plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director of the Water Management Division-EPA Region 4, the permittee shall have 30 days after such notification to make the changes necessary.

L. Plan Modification

The permittee shall modify the BMP3 plan whenever there is a change in design, construction, operation, or maintenance, pertaining to the facility which has a significant

effect on the potential for the discharge of pollutants to waters of the United States or if the plan proves to be ineffective in achieving the general objectives of reducing pollutants in wastewater or wet weather discharges.

At minimum the BMP3 plan shall be reviewed once every five years, and amended within three months if warranted. Any such changes to the BMP3 plan shall be consistent with the objectives and specific requirements listed in this permit. All changes in the BMP3 plan shall be reviewed by the operator's drilling engineer and authorized on-site representative.

At any time, if the BMP3 plan proves to be ineffective in achieving the general objective of preventing and minimizing the discharge of toxic pollutants and/or NAF-wastes, the BMP3 plan be subject to modification. If the BMP3 requirements in the permit are modified, the BMP3 plan must be modified to incorporate the revised BMP3 requirements within three months.

In particular, for those NAF-waste streams controlled through BMPs, the operator shall amend the BMP3 plan within 14 days whenever there is a change in the facility or in the operation of the facility which materially increases the generation of those NAF wastes or their release, or potential release to the receiving waters.

Modifications to the plan may be reviewed by EPA in the same manner as described above.

Part V. Test Procedures and Definitions

A. Test Procedures

1. Samples of Wastes

If requested, the permittee shall provide EPA with a sample of any waste in a manner specified by the Agency.

2. Drilling Fluids Toxicity Test (Suspended Particulate Phase Toxicity Test)

The approved sampling and test methods for permit compliance are provided in the final effluent guidelines published at 58 FR 12507 on March 4, 1993 as Appendix 2 to subpart A of 40 C.F.R. Part 435.

3. Static Sheen Test

The approved sampling and test methods for permit compliance are provided in the final effluent guidelines published at 58 FR 12506 on March 4, 1993 as Appendix 1 to subpart A of 40 C.F.R. Part 435.

4. Visual Sheen Test

The visual sheen test is used to detect free oil by observing the surface of the receiving water for the presence of a sheen while discharging. A sheen is defined as a "silvery" or "metallic" sheen, gloss, or increased reflectivity; visual color; iridescence; or oil slick on the surface (see 58 FR 12507). The operator must conduct a visual sheen test only at times when a sheen could be observed. This restriction eliminates observations at night or when atmospheric or surface conditions prohibit the observer from detecting a sheen (e.g., during rain or rough seas, etc.). Certain discharges can only occur if a visual sheen test can be conducted.

The observer must be positioned on the rig or platform, relative to both the discharge point and current flow at the time of discharge, such that the observer can detect a sheen should it surface down current from the discharge. For discharges that have been occurring for at least 15 minutes previously, observations may be made any time thereafter. For discharges of less than 15 minutes duration, observations must be made both during discharge and 5 minutes after discharge has ceased.

5. Produced Water Acute Toxicity Test

The method for determining the 96-hour LC₅₀ for produced water effluents is published in, *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and*

Marine Organisms (EPA/821-R-02-012), or the most current edition. The species to be used for compliance testing for this permit are *Mysidopsis bahia* (*Americamysis bahia* (Mysid shrimp)) and *Menida beryllina* (Inland silverside minnow).

6. Base Fluid Sediment Toxicity Test

The approved test method for permit compliance is identified as ASTM E1367-92 (or most current EPA approved method) entitled, *Standard Guide Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods* (or the most current EPA approved method), with *Leptocheirus plumulosus* as the test organism and sediment preparation procedures specified in Appendix 3 of 40 C.F.R. Part 435, subpart A.

$$\text{The base fluid sediment toxicity ratio} = \frac{\text{10-day LC}_{50} \text{ of C}_{16}\text{-C}_{18} \text{ internal olefin}}{\text{10-day LC}_{50} \text{ of stock base fluid}}$$

7. Base Fluids Biodegradation Rate

The approved method for permit compliance is identified as International Standards Organization (ISO) 11734:1995 (or the most current EPA approved method) entitled, *Water quality - Evaluation of the ultimate anaerobic biodegradability of organic compounds in digested sludge - Method by measurement of the biogas production* (1995 edition), supplemented with modifications in Appendix 4 of 40 C.F.R. Part 435, subpart A. Compliance with the biodegradation limit will be determined using the following ratio:

$$\text{Biodegradation rate ratio} = \frac{\text{Cumulative gas production (ml) of C}_{16}\text{-C}_{18} \text{ internal olefin}}{\text{Cumulative gas production (ml) of stock base fluid, both at 275 days}}$$

8. Polynuclear Aromatic Hydrocarbons

The approved method for permit compliance is EPA Method 1654A entitled, *PAH Content of Oil by High Performance Liquid Chromatography with a UV Detector*.

$$\text{PAH mass ratio} = \frac{\text{Mass (g) of PAH (as phenanthrene)}}{\text{Mass (g) of stock base fluid}}$$

9. Formation Oil

a. Contamination of Non-Aqueous Based Drilling Fluids

The approved test method for permit compliance is Gas Chromatography/Mass Spectrometry (GC/MS) contained in Appendix 5 of 40 C.F.R. Part 435, subpart A. This test shall be performed before drilling fluids are shipped offshore.

The GC/MS method reports results for the GC/MS test as a percentage crude contamination when calibrated for a specific crude oil. In order to define an applicable pass/fail limit to cover a variety of crude oils, the same crude oil used in calibration of the Reverse Phase Extraction (RPE) test shall be used to calibrate the GC/MS test results to a standardized ratio of the target ION Scan 105. Based on the performance of a range of crude oils against the standardized ratio, a value will be selected as a pass/fail standard which will represent detection of crude oil.

b. Contamination of Discharged Non-Aqueous Based Drilling Fluids Retained on Cuttings

The approved test method for permit compliance is the RPE method in Appendix 6 of 40 C.F.R. Part 435, subpart A, which is applied to drilling fluid removed from drill cuttings. If the operator wishes to confirm with results of the RPE method (Appendix 6 of 40 C.F.R. Part 435, subpart A), the operator may use the GC/MS compliance assurance method (Appendix 5 of 40 C.F.R. Part 435, subpart A). Results from the GC/MS compliance assurance method (Appendix 5 of 40 C.F.R. Part 435, subpart A)

shall supercede the results of the RPE method (Appendix 6 of 40 C.F.R. Part 435, subpart A).

10. Drilling Fluids Sediment Toxicity

The approved test method for permit compliance is identified as ASTM E1367-92 (or the most current EPA approved method) entitled, *Standard Guide Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods*, with *Leptocheirus plumulosus* as the test organism and sediment preparation procedures specified in Appendix 3 of 40 C.F.R. Part 435, subpart A.

The drilling fluid sediment toxicity ratio =
$$\frac{\text{4-day LC}_{50} \text{ of C}_{16}\text{-C}_{18} \text{ internal olefin}}{\text{4-day LC}_{50} \text{ drilling fluid removed from drill cuttings at the solids control equipment}}$$

11. Retention of Non-Aqueous Based Drilling Fluid on Cuttings

The maximum permissible retention of NAF base on wet drill cuttings averaged over drilling intervals using NAFs shall be determined by the American Petroleum Institute Retort method contained in Appendix 7 of 40 C.F.R. Part 435, subpart A. The required sampling, handling, and documentation procedures are listed in Addendum A of Appendix 7 of 40 C.F.R. Part 435, subpart A.

B. Definitions

1. Act means the Clean Water Act (CWA), as amended (33 U.S.C. 1251 et. seq.).
2. Administrator means the Administrator of EPA, Region 4.
3. Annual average means the average of all discharges sampled and/or measured during a calendar year in which daily discharges are sampled and/or measured, divided by the number of discharges sampled and/or measured during such year.
4. Applicable effluent standards and limitations means all state and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards or performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. Areas of Biological Concern for water within the territorial seas (shoreline to 3-mile offshore) are those defined as "no activity zones" for biological reasons by the states of Alabama, Florida and Mississippi. For offshore waters seaward of three miles, areas of biological concern include "no activity zones" defined by the Department of Interior (DOI) for biological reasons, or identified by EPA in consultation with the DOI, the states, or other interested federal agencies, as containing biological communities, features or functions that are potentially sensitive to discharges associated with the oil and gas industry.
6. Average Daily Discharge Limitation means the highest allowable average of discharges over a 24-hour period, calculated as the sum of all discharges or concentrations measured divided by the number of discharges or concentrations measured that day.
7. Average Monthly Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of discharges measured that month. The limitation may be the average of discharge rates or concentrations.
8. Base fluid means the continuous phase or suspending medium of a drilling fluid formation.
9. Base fluid retained on cuttings refers to the American Petroleum Institute Recommended Practice 13B-2 supplemented with the specifications, sampling methods, and averaging method for retention values provided in 40 C.F.R. Part 435, subpart A, Appendix 7.

10. Batch or Bulk Discharge is any discharge of a discrete volume or mass of water based drilling fluid effluent from a pit, tank, or similar container that occurs on a one-time, infrequent, or irregular basis.
11. Biodegradation rate refers to the ISO 11734:1995 (or most current EPA approved method), "Water quality - Evaluation of the ultimate anaerobic biodegradation of organic compounds in digested sludge-Method by measurement of the biogas production (1995 edition)", supplemented with modifications in Appendix 4 of 40 C.F.R. Part 435, subpart A.
12. Blow-Out Preventer Control Fluid means fluid used to actuate the hydraulic equipment on the blow-out preventer or subsea production wellhead assembly.
13. Boiler Blowdown means discharges from boilers necessary to minimize solids build-up in the boilers, including vents from boilers and other heating systems.
14. Bypass means the intentional diversion of waste streams from any portion of a treatment facility. (See Part II.B.3 of this permit.)
15. C₁₂-C₁₄ Ester and C₈ Ester means the fatty-acid/2-ethylhexyl esters with carbon chain lengths ranging from 8 to 16 and represented by the Chemical Abstracts Service (CAS) No. 135800-37-2.
16. C₁₆-C₁₈ Internal Olefin means a 65/35 blend, proportioned by mass, of hexadecene and octadecene, respectively. Hexadecene is an unsaturated hydrocarbon with a carbon chain length of 16, an internal double carbon bond, and is represented by the CAS No. 26952-14-7. Octadecene is an unsaturated hydrocarbon with a carbon chain length of 18, an internal double carbon bond, and is represented by CAS No. 27070-58-2.
17. C₁₆-C₁₈ Internal Olefin Drilling Fluid means a C₁₆-C₁₈ internal olefin drilling fluid formulated as specified in Appendix 8 of C.F.R. Part 435, subpart A.
18. Clinkers are small lumps of residual material left after incineration.
19. Completion Fluids are salt solutions, weighted brines, polymers and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production. These fluids move into the formation and return to the surface as a slug with the produced water. Drilling muds remaining in the wellbore during logging, casing, and cementing operations or during temporary abandonment of the well are not considered completion fluids and are regulated by drilling fluids requirements.
20. Daily Average Discharge (also known as monthly average) limitations means the highest allowable average daily discharge(s) over a calendar month, calculated as the sum of all daily discharge(s) measured during a calendar month divided by the number of daily discharge(s) measured during that month.
21. Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant or waste stream discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day. Daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the average (weighted by flow value) of all samples collected during that sampling day.
22. Daily Maximum discharge limitations are the highest allowable discharge rate or concentration measured during a calendar day.

23. Deck Drainage is all waste resulting from platform washings, deck washings, deck area spills, equipment washings, rainwater, and runoff from curbs, gutters, and drains, including drip pans and wash areas, pans and work areas within facilities subject to this permit.
24. Desalination Unit Discharge means waste water associated with the process of creating freshwater from seawater.
25. Development Drilling means the drilling of wells required to efficiently produce a hydrocarbon formation or formations.
26. Development Facility means any fixed or mobile structure that is engaged in the drilling of productive wells.
27. Diatomaceous Earth Filter Media is the filter media used to filter seawater or other authorized completion fluids and subsequently washed from the filter.
28. Diesel oil refers to the grade of distillate fuel oil, as specified in the American Society of Testing and Materials Standard Specifications for Diesel Fuel Oils D975-91, that is typically used as the continuous phase in conventional oil-based drilling fluids.
29. Director means the Director, EPA Region 4, Water Management Division
30. Domestic waste means materials discharged from sinks, showers, laundries, safety showers, eye-wash stations, hand-wash stations, fish cleaning stations, and galleys located within facilities subject to 40 C.F.R. Part 435, subpart A.
31. Drill cuttings means the particles generated by drilling into subsurface geologic formations and carried out from the wellbore with the drilling fluid. Examples of drill cuttings include small pieces of rock varying in size and texture from fine silt to gravel. Drill cuttings are generally generated from solids control equipment and settle out and accumulate in quiescent areas in the solids control equipment or the equipment processing drilling fluid (i.e., accumulated solids).
- a. Wet drill cuttings means the unaltered drill cuttings and adhering drilling fluid and formation oil carried out from the wellbore with the drilling fluid.
 - b. Dry drill cuttings means the residue remaining in the retort vessel after completing the retort procedure specified in Appendix 7 of 40 C.F.R. Part 435, subpart A.
32. Drilling fluid means the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation.
- a. Water-based drilling fluid means the continuous phase and suspending medium for solids is a water-miscible fluid, regardless of the presence of oil.
 - b. Non-aqueous drilling fluid means the continuous phase and suspending medium for solids is a water-immiscible fluid, such as oleaginous materials (e.g., mineral oil, paraffinic oil, C₁₆-C₁₈ internal olefins, and C₈-C₁₆ fatty acid/2-ethylhexyl esters).
 - i. Oil-based means the continuous phase of the drilling fluid consists of diesel oil, mineral oil, or some other oil, but contains no synthetic material or enhanced mineral oil.
 - ii. Enhanced mineral oil-based means the continuous phase of the drilling fluid is enhanced mineral oil.
 - iii. Synthetic-based means the continuous phase of the drilling fluid is a synthetic material or a combination of synthetic materials.
33. Dual Gradient Drilling means well drilling where a pump is used at the seafloor to lift drilling fluids and cuttings to the surface. This allows for a dual pressure gradient - one from the hydrostatic weight of water in the riser and one from the mud weight in the well. Dual gradient drilling can include a discharge of the larger size cuttings at the seafloor.

34. End of Well Sample means the sample taken after the final log run is completed and prior to bulk discharge.
35. Enhanced mineral oil as applied to enhanced mineral-oil based drilling fluid means a petroleum distillate which has been highly purified and is distinguished from diesel oil in having a lower polynuclear aromatic hydrocarbon (PAH) content. Typically, conventional mineral oils have a PAH content on the order of 0.35 weight percent expressed as phenanthrene, whereas enhanced mineral oils typically have a PAH content of 0.001 or lower weight percent PAH expressed as phenanthrene.
36. Excess Cement Slurry means the excess mixed cement, including additives and wastes from equipment washdown after a cementing operation.
37. Existing Sources are facilities conducting exploration activities and those that have commenced development or production activities that were permitted as of the effective date of the Offshore Guidelines (March 4, 1993).
38. Exploratory facility means any fixed or mobile structure subject to 40 C.F.R. Part 435, subpart A that is engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs.
39. Formation oil means the oil from a producing formation which is detected in the drilling fluid, as determined by Gas Chromatography/Mass Spectrometer (GC/MS) compliance assurance method specified in Appendix 5 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed before being shipped offshore, and as determined by the Reverse Phase Extraction (RPE) method specified in Appendix 6 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed at the offshore point of discharge. Detection of formation oil by the RPE method may be confirmed by the GC/MS method, and the results of the GC/MS compliance assurance method shall supercede those of the RPE method.
40. Free Oil is oil that causes a sheen, streak, or slick on the surface of the test container or receiving water.
41. Garbage means all kinds of victual, domestic, and operational waste "generated during the normal operation of the ship and liable to be disposed of continuously or periodically" (see MARPOL 73/78 regulations).
42. Grab Sample means an individual sample collected in less than 15 minutes.
43. Graywater is drainage from dishwater, shower, laundry, bath, and wash basin drains and does not include drainage from toilets, urinals, hospitals, and drainage from cargo areas (see MARPOL 73/78 regulations).
44. Inverse Emulsion Drilling Fluids are oil-based drilling fluids which also contain large amounts of water.
45. Live Bottom Areas are those areas that contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascideians sponges, bryozoans, seagrasses, or corals living upon and attached to naturally occurring hard or rocky formations with fishes and other fauna.
46. Maximum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the maximum concentration allowed as measured in any single sample of the barite for determination of cadmium and mercury content.
47. Maximum for any one day as applied to BCT and BAT effluent limitations and NSPS for oil and grease in produced water means the maximum concentration allowed as measured by the average of four grab samples collected over a 24-hour period that are analyzed separately. Alternatively, for BAT and NSPS the maximum concentration allowed may be determined on the basis of physical composition of the four grab samples prior to a single analysis.

48. Maximum Hourly Rate is the greatest number of barrels of drilling fluids discharged within one hour, expressed as barrels per hour.

49. Maximum weighted mass ratio averaged over all NAF well sections for BAT effluent limitations and NSPS for base fluid retained on cuttings means the weighted average base fluid retention for all NAF well sections as determined by the API Recommended Practice 13B-2, using the methods and averaging calculations presented in Appendix 7 of 40 C.F.R. Part 435, subpart A.

50. Method 1654A refers to the method "PAH Content of Oil by High Performance Liquid Chromatography with a UV Detector," which was published in Methods for the Determination of Diesel, Mineral and Crude Oils in Offshore Oil and Gas Industry Discharges, EPA-821-R-92-008 (incorporated by reference and available from the National Technical Information Service).

51. Minimum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the minimum 96-hour LC_{50} value allowed as measured in any single sample of the discharged waste stream. Minimum as applied to BPT and BCT effluent limitations and NSPS for sanitary wastes means the minimum concentration value allowed as measured in any single sample of the discharged waste stream.

52. Muds, Cuttings, and Cement at the Seafloor means discharges that occur at the seafloor prior to installation of the marine riser and during marine riser disconnect, well abandonment, and plugging operations.

53. National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements under sections 307, 316, 318, 402, 403, and 405 of the Act.

54. New Source means any facility or activity of this subcategory that meets the definition of "new source" under 40 C.F.R. § 122.2 and meets the criteria for determination of new sources under 40 C.F.R. § 122.29(b) applied consistently with all of the following definitions: (i) the term "water area" as used in the term "site" in 40 C.F.R. § 122.29 and § 122.2 shall mean the water area and ocean floor beneath any exploratory, development, or production facility where such facility is conducting its exploratory, development or production activities and, (ii) the term "significant site preparation work" as used in 40 C.F.R. § 122.29 shall mean the process of surveying, clearing, or preparing an area of the ocean floor for the purpose of constructing or placing a development or production facility on or over the site.

55. Ninety-Six (96)-hour LC_{50} means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

56. No Activity Zones include those areas identified by MMS where no structures, drilling rigs, or pipelines will be allowed. These zones are identified as lease stipulations in the U.S. Department of the Interior, MMS, August 1990, Environmental Impact Statement for Sales 131, 135, and 137 Western, Central, and Eastern Gulf of Mexico. Additional no activity zones may be identified by MMS during the life of this permit, and by the States of Alabama, Mississippi and Florida within their territorial waters (up to 3 miles offshore) where no structures, drilling rigs, or pipelines will be allowed.

57. No Discharge Areas are areas specified by EPA where discharge of pollutants may not occur.

58. No discharge of free oil means that waste streams may not be discharged that contain free oil as evidenced by monitoring method specified for that particular stream, e.g., deck drainage or miscellaneous discharges cannot be discharged when they would cause a film or sheen upon or discoloration of the surface of the receiving water; drilling fluids or cuttings may not be discharged when they fail the static sheen test⁶ defined in Appendix 1 of subpart A of 40 C.F.R. Part 435.
59. Non-Operational Leases are those leases on which no discharge has taken place within 2 years prior to the effective date of the reissued general permit.
60. Operating Facilities are leases on which a discharge has taken place within two years of the effective date of the reissued general permit.
61. Operational waste means all cargo associated waste, maintenance waste, cargo residues, and ashes and clinkers from incinerators and coal burning boilers.
62. Packer Fluids are low solids fluids between the packer, production string, and well casing. They are considered to be workover fluids.
63. PAH (as phenanthrene) means polynuclear aromatic hydrocarbons reported as phenanthrene.
64. Parameters that are regulated by this permit and listed with approved methods of analysis in Table 1.B at 40 C.F.R. § 136.3 are defined as follows:
- a. Cadmium means total cadmium.
 - b. Chlorine means total residual chlorine.
 - c. Mercury means total mercury.
 - d. Oil and Grease means total recoverable oil and grease.
65. Priority Pollutants are the 126 chemicals or elements identified by EPA, pursuant to section 307 of the Clean Water Act and 40 C.F.R. § 401.15.
66. Produced Sand means the slurried particles used in hydraulic fracturing, the accumulated formation sands and scales particles generated during production. Produced sand also includes desander discharge from the produced water waste stream, and blowdown of the water phase from the produced water treating system.
67. Produced Water means the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process.
68. Production facility means any fixed or mobile structure subject to this subpart that is either engaged in well completion or used for active recovery of hydrocarbons from producing formations. It includes facilities that are engaged in hydrocarbon fluids separation even if located separately from wellheads.
69. Sanitary Waste means human body waste discharged from toilets and urinals.
70. Sediment Toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to the ASTM E1367-92 (or most current EPA approved method): Standard Guide for Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods with *Leptocheirus plumulosus* as the test organism and sediment preparation procedures specified in Appendix 3 of 40 C.F.R. Part 435, subpart A.
71. Severe Property Damage means substantial physical damage to property, damage to the treatment facilities which cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
72. Sheen means a silvery or metallic sheen, gloss, or increased reflectivity; visual color; iridescence; or oil slick on the water surface.

73. Solids Control Equipment means shale shakers, centrifuges, mud cleaners, and other equipment used to separate drill cuttings and/or stock barite solids drilling fluid recovered from the wellbore.

74. Source Water and Sand are the water and entrained solids brought to the surface from non-hydrocarbon bearing formations for the purpose of pressure maintenance or secondary recovery.

75. Spotting means the process of adding a lubricant (spot) downhole to free stuck pipe.

76. SPP toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to bioassay test procedure presented in Appendix 2 of subpart A of 40 C.F.R. Part 435.

77. Static sheen test means the standard test procedure that has been developed for this industrial subcategory for the purpose of demonstrating compliance with the requirement of no discharge of free oil. The methodology for performing the static sheen test is presented in Appendix 1 of subpart A of 40 C.F.R. Part 435.

78. Stock barite means the barite that was used to formulate a drilling fluid.

79. Stock base fluid means the base fluid that was used to formulate a drilling fluid.

80. Synthetic material as applied to synthetic-based drilling fluid means material produced by the reaction of specific purified chemical feedstock, as opposed to the traditional base fluids such as diesel and mineral oil which are derived from crude oil solely through physical separation processes include fractionation and distillation and/or minor chemical reactions such as cracking and hydro processing. Since they are synthesized by the reaction of purified compounds, synthetic materials suitable for use in drilling fluids are typically free of polynuclear aromatic hydrocarbons (PAHs) but are sometimes found to contain levels of PAH up to 0.001 weight percent PAH expressed as phenanthrene. Internal olefins and vegetable esters are two examples of synthetic materials suitable for use by the oil and gas extraction industry in formulating drilling fluids. Internal olefins are synthesized from the isomerization of purified straight-chain (linear) alpha olefins. C₁₆₋₁₈ linear alpha olefins are unsaturated hydrocarbons with the carbon to carbon double bond in the terminal position. Internal olefins are typically formed from heating linear alpha olefins with a catalyst. The feed material for synthetic linear alpha olefins is typically purified ethylene. Vegetable esters are synthesized from the acid-catalyzed esterification of vegetable fatty acids with various alcohols. EPA listed these two branches of synthetic fluid base materials to provide examples, and EPA does not mean to exclude other synthetic materials that are either in current use or may be used in the future. A synthetic-based drilling fluid may include a combination of synthetic materials.

81. Territorial Seas means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

82. Trace Amounts means that if materials added downhole as well treatment, completion, or workover fluids do not contain priority pollutants then the discharge is assumed not to contain priority pollutants except possibly in trace amounts.

83. Treatment Chemicals means biocides, corrosion inhibitors, or other chemicals which are used to treat seawater or freshwater to prevent corrosion or fouling of piping or equipment. Chemicals or compounds approved by EPA-Region 4 in

accordance with Part I.C.6 (“Toxic Compounds”) are not considered treatment chemicals.

84. Uncontaminated Ballast/Bilge water means seawater added or removed to maintain proper draft that does not come in contact with surfaces that may cause contamination.

85. Uncontaminated freshwater means freshwater which is discharged without the addition of chemicals, such as: (1) discharges of excess freshwater that permit the continuous operation of fire control and utility lift pumps, (2) excess freshwater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in fire protection, and (4) water used to pressure test new piping.

86. Uncontaminated seawater means seawater which is returned to the sea without the addition of chemicals, such as: (1) discharges of excess seawater which permit the continuous operation of fire control and utility lift pumps, (2) excess seawater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in fire protection, (4) water used to pressure test new piping and (5) non-contact cooling water which has not been treated with biocides.

87. Water-based Drilling Fluids is the conventional drilling mud in which water is the continuous phase and the suspending medium for solids, whether or not oil is present.

88. Well completion fluids means salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production.

89. Well treatment fluids means any fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled. These fluids move into the formation and return to the surface as a slug with produced water. Stimulation fluids include substances such as acids, solvents, and propping agents.

90. Workover fluids means salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair or abandonment procedures. High solids drilling fluids used during workover operations are not considered workover fluids by definition and therefore must meet drilling fluid effluent limitations before discharge may occur. Packer fluids, low solids fluids between the packer, production string, and well casing are considered to be workover fluids and must meet only the effluent requirements imposed on workover fluids.

91. 96-hour LC₅₀ means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 94 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

92. The term MGD means million gallons per day.

93. The term mg/l means milligrams per liter or parts per million (ppm).

94. The term ug/l shall means micrograms per liter or part per billion (ppb).

Table 1. Effluent Limitations, Prohibitions, and Monitoring Requirements for the Eastern Gulf of Mexico NPDES General Permit for Existing Sources and New Sources

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
Water-Based Drilling Fluids	Oil-based Drilling Fluids	No discharge			
	Oil-contaminated Drilling Fluids	No discharge			
	Drilling Fluids to Which Diesel Oil has been Added	No discharge			
	Mercury (Hg) and Cadmium (Cd) in Barite	No discharge of drilling fluids if added barite contains Hg in excess of 1.0 mg/kg or Cd in excess of 3.0 mg/kg (dry wt)	Once per new source of barite used	EPA SW846 methods 6010 for cadmium & 7471 for mercury	mg Hg and mg Cd/kg in stock barite
	Toxicity	30,000 ppm daily minimum 30,000 ppm monthly average of minimum values	Once/month Once/end of well ^b Once/month	Grab/96-hr LC ₅₀ using <i>Mysidopsis bahia</i> ; Method at 58 FR 12507	Minimum LC ₅₀ of tests performed and monthly average LC ₅₀
	Free Oil	No free oil	Once/week during discharge	Static sheen; Method at 58 FR 12506	Number of days sheen observed
	Maximum Discharge Rate	1,000 barrels/hr	Once/day	Estimate	Max. hourly rate in bbl/hr

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
	Mineral Oil	Mineral oil may be used only as a carrier fluid, lubricity additive, or pill.			
	Drilling Fluids Inventory	Record	Once/well	Inventory	Chemical constituents
	Volume	Report	Once/month	Estimate	Monthly total in bbl/month
Water-Based Drill Fluids (Continued)	Within 1000 Meters of an Areas of Biological Concern (ABC) or a Federally Designated Material Disposal Site	No discharge			
Water-Based Drill Cuttings	Note: Drill cuttings are subject to the same limitations/prohibitions as drilling fluids except <u>Maximum Discharge Rate</u> .				
	Free Oil	No free oil	Once/week	Static sheen; Method at 58 FR 12506	Number of days sheen observed
	Volume	Report	Once/month	Estimate	Monthly total in bbl/month
Produced Water	Oil and Grease	42 mg/l daily maximum and 29 mg/l monthly average	Once/month ^c	Grab/ Gravimetric	Daily max. and monthly avg.

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
	Toxicity	Acute toxicity (LC ₅₀); critical dilution as specified by the requirements at Part I.B.3(b) and Appendix A of this permit.	Once/2 month (or Once 6/mons after passing six consecutive bimonthly test)	Grab/96-hour LC ₅₀ using <i>Mysidopsis bahia</i> and Inland Silverside minnows (Method in EPA/821-R-02-012)	Minimum LC ₅₀ for both species and full laboratory report
	Flow (bbl/month)		Once/month	Estimate	Monthly rate
	Within 1000 meters of an Area of Biological Concern (ABC) or a Federally Designated Material Disposal Site	No discharge			
Deck Drainage	Free Oil	No free oil	Once/day when discharging ^d	Visual sheen	Number of days sheen observed
	Volume (bbl/month)		Once/month	Estimate	Monthly total
Produced Sand	No Discharge				

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
Well Treatment, Completion, and Workover Fluids (includes packer fluids) ^e	Free Oil	No free oil	Once/day when discharging	Static sheen	Number of days sheen observed
	Oil and Grease	42.0 mg/l daily maximum and 29.0 mg/l monthly average	Once/month	Grab/ Gravimetric	Daily max. and monthly avg.
	Priority Pollutants	No priority pollutants		Monitor added materials	
	Volume (bbl/month)		Once/month	Estimate	Monthly total
Sanitary Waste (Continuously manned by 10 or more persons) ^f	Solids	No floating solids	Once/day, in daylight	Observation	Number of days solids observed
	Residual Chlorine	At least (but as close to) 1.0 mg/l	Once/month	Grab/Hach CN-66-DPD or TRC method in 40 C.F.R. Part 136	Concentration
	Flow (MGD)		Once/month	Estimate	
Sanitary Waste (Continuously manned by 9 or fewer persons or intermittently by any) ^f	Solids	No floating solids	Once/day, in daylight	Observation	Number of days solids observed

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
Domestic Waste	Solids	No floating solids; no food waste within 12 miles of land; comminuted food waste smaller than 25-mm beyond 12 miles	Once/day following morning or midday meal at time of maximum expected discharge	Observation	Number of days solids observed
Miscellaneous Discharges ^g – Desalination Unit Blowout Preventer Fluid Uncontaminated Ballast/Bilge Water Mud, Cuttings, and Cement at the Seafloor Uncontaminated Seawater Boiler Blowdown Source Water and Sand Diatomaceous Earth Filter Media	Free Oil	No free oil	Once/week	Visual sheen	Number of days sheen observed

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
Miscellaneous Discharges to Which Treatment Chemicals Have Been Added	Free Oil	No Free Oil	Once/day when discharging	Visual Sheen	Number of days sheen observed
	Toxicity	48-hour ave. minimum NOEC and monthly ave. minimum NOEC	Rate Dependent	Grab	Lowest NOEC observed for either of the two species

- ^a Toxicity test to be conducted using suspended particulate phase (SPP) of a 9:1 seawater:mud dilution. The sample shall be taken beneath the shale shaker, or if there are no returns across the shaker, the sample must be taken from a location that is characteristic of the overall mud system to be discharged.
- ^b Sample shall be taken after the final log run is completed and prior to bulk discharge.
- ^c The daily maximum concentration may be based on the average of up to four grab sample results in the 24 hour period.
- ^d When discharging and facility is manned. Monitoring shall be accomplished during times when observation of a visual sheen on the surface of the receiving water is possible in the vicinity of the discharge.
- ^e No discharge of priority pollutants except in trace amounts. Information on the specific chemical composition shall be recorded but not reported unless requested by EPA.
- ^f Any facility that properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed to be in compliance with permit limitations for sanitary waste. The MSD shall be tested yearly for proper operation and test results maintained at the facility.
- ^g Based on LC₅₀ results, the following compounds may also be included as miscellaneous discharges: subsea wellhead preservation fluids, subsea production control fluids, umbilical steel tune storage fluid, leak tracer fluid, riser tensioner fluid.

Table 2. Effluent Limitations, Prohibitions, and Monitoring Requirements for the Eastern Gulf of Mexico NPDES General Permit Existing and New Sources using Synthetic Based Drilling Fluids

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
Non-Aqueous Based Drilling Fluids	No discharge, except that which adheres to cuttings, de minimus discharges and small volume discharges.				
Drill Cuttings Generated Using Non-Aqueous-Based Drilling	Cuttings from Oil-Based Drilling Fluids	No Discharge			
	Cuttings from Oil Contaminated Drilling Fluids	No Discharge			
	Cuttings Generated Using Mineral Oil	No Discharge			
	Cuttings Generated Using Drilling Fluids Which Contain Diesel Oil	No Discharge			
	Areas of Biological Concern or a Federally Designated Material Disposal Site	No discharge within 1000 meters.			
	Free Oil	No Discharge	Once/week	Static sheen; method at 58 FR 12506	Number of days observed

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
	Volume	Report	Once/month	Estimate	Monthly total in bbl/month
	Formation Oil	No Discharge	GC/MS test once prior to drilling & RPE or GC/MS once/week.	GC/MS method at 40 C.F.R. Part 435, Appendix 5 of Subpart A	Number of Days
	Suspended Particulate Phase Toxicity	30,000 ppm daily minimum 30,000 ppm monthly ave of minimum values	Once/month and Once/end of well ^b	Grab/96-hr LC ₅₀ using <i>Mysidopsis bahia</i> (same as <i>Americamysis bahia</i>); Method 58 FR 12507	Minimum LC ₅₀ of tests performed and monthly ave LC ₅₀
	Drilling Fluid Sediment Toxicity Ratio	1.0	Once/month by grab sample	ASTM E1367-92	ratio
	Polynuclear Aromatic Hydrocarbons (PAH)	1 x 10 ⁻⁵	once per year on each fluid blend	EPA Method 1654A	ratio
	Sediment Toxicity Ratio	1.0	Once per year on each fluids blend	ASTM E1367-92	ratio

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement		
			Measurement Frequency	Sample Type/ Method	Recorded/ Reported Value
	Base Fluid Retained on Cuttings (C ₁₆₋₁₈ internal olefin)	6.9 g/100 g wet drill cuttings	once per day by grab sample, up to three sampling episodes per day	API Retort Method; 40 C.F.R. Part 423, Subpart A, Appendix 7	g/ 100 g wet drill cuttings
	Base Fluid Retained on Cuttings (C ₁₂₋₁₄ ester)	9.4 g/100 g wet drill cuttings	once per day by grab sample, up to three sampling episodes per day	API Retort Method; 40 C.F.R. Part 423, Subpart A, Appendix 7	g/ 100 g wet drill cuttings
	Biodegradation Rate	1.0	Once per year on each fluid blend	ISO 11734:1995	ratio
	Mercury in Stock barite	1.0 mg/kg (dry wt.)	Representative sample of each stock barite prior to drilling	EPA SWA method 7471A	mg/kg
	Cadmium in Stock barite	3.0 mg/kg (dry wt.)	Representative sample of each stock barite prior to drilling	EPA SWA method 6010B	mg/kg

- ^a Toxicity test to be conducted using suspended particulate phase (SPP) of a 9:1 seawater:mud dilution. The sample shall be taken beneath the shale shaker, or if there are no returns across the shaker, the sample must be taken from a location that is characteristic of the overall mud system to be discharged.
- ^b Sample shall be taken after the final log run is completed and prior to bulk discharge.
- ^c The daily maximum concentration may be based on the average of up to four grab sample results in the 24 hour period.

- ^d When discharging and facility is manned. Monitoring shall be accomplished during times when observation of a visual sheen on the surface of the receiving water is possible in the vicinity of the discharge.
- ^e No discharge of priority pollutants except in trace amounts. Information on the specific chemical composition shall be recorded but not reported unless requested by EPA.
- ^f Any facility that properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed to be in compliance with permit limitations for sanitary waste. The MSD shall be tested yearly for proper operation and test results maintained at the facility.

Appendix A

Effluent concentrations at the edge of a 100-m mixing zone will be modeled by EPA for each *produced water* outfall listed in an operator's notice of commencement of production operations. This projected effluent concentration will be used to calculate the permit limitation for produced water toxicity ($0.01 \times$ projected effluent concentration). The discharge will be modeled using each facility's measured water column conditions and discharge configurations as input for the CORMIX 3.2 expert system for hydrodynamic mixing zone analysis.

The notice of commencement of production operations will be accompanied by a completed CORMIX 3.2 input parameter table presented as Table A-1. The input parameters required are the following.

- Anticipated average discharge rate (bbl/day)
- Water depth (meters)
- Discharge pipe location in the water column (meters from surface or bottom)
- Discharge pipe orientation with respect to the prevailing current (degrees; 0° is co-flowing)
- Discharge pipe opening diameter (meters)

These parameters are site-specific parameters that the operator must determine through monitoring or measurement and certify as true to the best of their knowledge. All other input parameters for the CORMIX 3.2 model are established in Table 1 of Appendix B.

The Region will conduct the model using the operator's input parameters and report the toxicity limitation to the operator. If the parameters supplied by the operator change during the life of the permit (e.g., average discharge rate increases or decreases, a change in discharge pipe orientation, etc.), the operator should submit the new input parameters to the Region so that a new toxicity limitation can be calculated.

Compliance with the toxicity limitation will be demonstrated by conducting 96-hour toxicity tests using mysids (*Mysidopsis bahia*) and inland silverside minnows (*Menidia beryllina*) each month. The LC_{50} for each species will be reported on the DMR and a copy of the complete laboratory report shall be submitted.

Table A-1. CORMIX Input Parameters for Toxicity Limitation Calculation

Permit number: GMG28 _____
Company: _____
Contact name/Phone number: _____
Lease block/number: _____
Facility name: _____

Parameter Units

Discharge Rate _____ Average bbl/day

Water depth _____ meters

Discharge pipe location in the water column

_____ meters from _____ water surface, or _____ seafloor

Discharge pipe orientation with respect to the seafloor:

_____ degrees (90° is directed toward the surface)
(-90° is directed toward the seafloor)

Discharge pipe opening diameter:

_____ meters

Wind Speed

_____ m/sec

Appendix B

Table 1: CORMIX Ambient Input Parameters and Constant Discharge Input Parameters

Parameter	Units	Value
Surface Density (D_s)	kg/m ³	1023.00
Density Gradient () D)	kg/m ³ /m	0.163 (Linear)
Current Speed for < 200 m	cm/sec	5
Current Speed for > 200 m	cm/sec	15
Wind Speed	m/sec	4
Darcy-Wiesbach Friction Factor (f)		0.02
Legal Mixing Zone	m	100
Discharge Density	kg/m ³	1070.2
Horizontal Discharge Angle (F)	degrees	0
Vertical Discharge Angle (2)	degrees	- 45

Table 2: Produce Water Discharge Pipe Diameters

Range on Table (inches)	Model Input	
	(inches)	(meters)
0 - 5	4	0.1016
>5 - 7	6	0.1524
>7 - 9	8	0.2032
>9 - 11	10	0.3048
>11 - 15	13	0.3302

Table 3: CORMIX Predicted Critical Dilutions (Percent Effluent) for Discharges with a Depth Difference Between the Discharge Pipe Outlet and the Sea Floor of Greater than 12 meters and in Waters Less than 200 meters

Discharge Rate	Pipe Diameter (inches)				
(bbl/day)	>0" to 5"	>5" to 7"	>7" to 9"	>9" to 11"	>11" to 15"
>0 to 500	0.11	0.11	0.11	0.11	0.11
501 to 1000	0.22	0.22	0.22	0.22	0.22
1001 to 2000	0.37	0.37	0.37	0.37	0.37
2001 to 3000	0.48	0.48	0.48	0.48	0.48
3001 to 4000	0.56	0.56	0.56	0.56	0.56
4001 to 5000	0.65	0.66	0.66	0.66	0.66
5001 to 6000	0.73	0.74	0.74	0.74	0.74
6001 to 7000	0.77	0.78	0.78	0.78	0.78
7001 to 8000	0.84	0.86	0.86	0.87	0.87

Table 4: CORMIX Predicted Critical Dilutions (Percent Effluent) for Discharges with a Depth Difference Between the Discharge Pipe Outlet and the Sea Floor of Greater than 12 meters and in Waters Greater than 200 meters

Discharge Rate	Pipe Diameter (inches)				
(bbl/day)	>0" to 5"	>5" to 7"	>7" to 9"	>9" to 11"	>11" to 15"
>0 to 500	0.08	0.08	0.08	0.08	0.08
501 to 1000	0.12	0.12	0.12	0.12	0.12
1001 to 2000	0.18	0.18	0.18	0.18	0.18
2001 to 3000	0.22	0.22	0.22	0.22	0.22
3001 to 4000	0.24	0.25	0.25	0.25	0.25
4001 to 5000	0.28	0.28	0.28	0.28	0.28
5001 to 6000	0.30	0.30	0.31	0.31	0.31
6001 to 7000	0.32	0.32	0.32	0.32	0.32
7001 to 8000	0.35	0.35	0.35	0.35	0.35

Table 5: Minimum Vertical Port Separation to Avoid Interference

Port Discharge Rate	Waters Less than 200 meters	Waters Greater than 200 meters
(bbl/day)	(meters)	(meters)
>0 to 500	3.0	3.0
501 to 1000	3.0	6.0
1001 to 2000	4.0	6.0
2001 to 5000	5.0	6.0
5001 to 7000	5.5	6.0
7001 to 10,000	6.0	6.0

Table 6: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Seawater to which treatment chemicals have been added

Water Depth	Discharge Rate (bbl/day)	Pipe Diameter Range (actual diameter modeled)		
		>0 to 2" (1)	>2 to 4" (3)	>4 to 6" (5)
Less than 200 meters (shelf)	500 (0 to 1000)	0.29	0.81	1.23
	1000 (1000 - 2000)	0.31	0.86	1.34
	2000 (2000-4000)	0.34	0.88	1.43
	4000 (4000-8000)	0.33	0.98	1.48
	8000 (>8000)	0.29	1.02	1.68
Deeper than 200 meters (slope)	500 (0 to 1000)	0.32	1.03	1.65
	1000 (1000-2000)	0.28	0.99	1.65
	2000 (2000-4000)	0.24	0.89	1.57
	4000 (4000-8000)	0.20	0.78	1.42
	8000 (>8000)	0.17	0.66	1.24

Table 7: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Freshwater to which treatment chemicals have been added

Water Depth	Discharge Rate (bbl/day)	Pipe Diameter (actual diameter modeled)		
		>0 to 2" (1)	>2 to 4" (3)	>4 to 6" (5)
Less than 200 meters (shelf)	500 (0 to 1000)	0.57	3.85	16.9
	1000 (1000 - 2000)	0.44	3.20	16.7
	2000 (2000-4000)	0.34	2.50	5.76
	4000 (4000-8000)	0.35	1.86	4.66
	8000 (>8000)	0.30	1.36	3.52
Deeper than 200 meters (slope)	500 (0 to 1000)	0.67	11.6	29.9
	1000 (1000 - 2000)	0.40	6.69	29.1
	2000 (2000-4000)	0.26	3.57	15.9
	4000 (4000-8000)	0.22	1.96	9.14
	8000 (>8000)	0.19	1.06	4.67